

# ABHIYAANA 2021



**ST JOSEPH ENGINEERING COLLEGE**

AN AUTONOMOUS INSTITUTION

Vamanjoor, Mangaluru - 575 028, Karnataka

To be a global premier Institution of professional education and research.

## VISION

Service & Excellence

## MISSION

## MOTTO

- Provide opportunities to deserving students of all communities, the Christian students in particular for quality professional education.
- Design and deliver curricula to meet the national and global changing needs through student-centric learning methodologies.
- Attract, nurture and retain the best faculty and technical manpower.
- Consolidate the state-of-art infrastructure and equipment for teaching and research activities.
- Promote all round personality development of the students through interaction with alumni, academia and industry.
- Strengthen the Educational Social Responsibilities (ESR) of the institution.



**ST JOSEPH**  
Our Patron



## PRESIDENT'S MESSAGE

Dear Reader,

**“Commit your actions to the LORD, and your plans will succeed.”  
(Proverbs 16:3)**

I am overfilled with joy while writing this message for the 'Abhiyaana-2021', annual magazine of St Joseph Engineering College, Vamanjoor, Mangaluru. First, it gives me immense pleasure to announce that SJEC has been conferred with Autonomous Status by the University Grant Commission (UGC) and Visvesvaraya Technological University (VTU). Second, I am delighted to inform you that SJEC has been awarded an 'A+' Grade by National Assessment and Accreditation Council (NAAC). I take pride in congratulating the Director, the Principal, the Faculty, the Staff and the Students of SJEC for their exceptional work and contribution towards achieving these milestones.

Autonomy gives flexibility to an institution to design curricula by recognizing the needs of the industry and conducting transparent assessments. Both Autonomy and Accreditation bring in quality and responsibility. I am confident that SJEC with its Motto "Service and Excellence" will stand out when compared to its peers by providing quality-engineering education and will continue shaping students who will contribute to the growth of our nation.

With the launch of NEP-2020, we are now moving towards a more multidisciplinary and holistic education. The fundamental principles of NEP-2020 direct towards conceptual understanding, creativity, critical thinking, ethics, values, life skills, use of technology, and diversity in higher education. I am confident that SJEC with its vast experience in implementing Outcome-Based Education (OBE), strong industry associations, alumni connections and dedicated faculty will be the front runners in implementing NEP-2020.

In this new chapter of SJEC as an Autonomous Institution, I request all the stakeholders to continue their support and cooperation in making SJEC a world-class institution.

May St Joseph our patron continue to intercede for you all.

**Rev. Dr Peter Paul Saldanha**  
*Bishop of Mangalore*

## DIRECTOR'S MESSAGE



I am delighted that yet another edition of our College Magazine, Abhiyaana-2021, is in your hand. As you glance through the pages of this beautiful magazine, you are certain to get connected to St Joseph Engineering College and its engaging campus life.

I got impressed with an inspiring quote by Ralph Waldo Emerson which reads "Do not go where the path may lead; go instead where there is no path and leave a trail". Highly motivating words indeed! When the impetus is on the process rather than results, all things fall in place and the work gets done seamlessly. I am glad that SJEC is committed to treading that path.

The academic year 2020-21 has been a marquee year in the history of our college and has witnessed a plethora of outstanding accomplishments. When I was writing my message for Abhiyaana 2020, we were an affiliated college aspiring to go Autonomous and I am happy to say that we have achieved that feat. The UGC Expert Team that had visited our college to grant us fresh Autonomous status were overwhelmed with the processes that we follow and had only good things to say about this institution. Getting accredited by NAAC with A+ Grade by having a CGPA of 3.39 on a 4-point scale and joining an elite list of colleges to be accredited with an A+ grade by NAAC in its very first cycle was another feather in our cap.

Apart from these stellar achievements, SJEC has emerged as one of the 49 institutions from across India and one among the 5 colleges in Karnataka to be selected for establishing AICTE IDEA Labs, a two-year project costing 110 lakhs. Becoming one of the 255 institutions pan India to have received approval for implementation of the National Innovation and Start-up Policy (NISIP), getting selected for AICTE-LITE Program, clinching 5 ranks and 3 Gold Medals at the university level and having a good number of students getting recruited in reputed companies through campus placements have all contributed to our success story.

All these transformations speak volumes of the processes that the college follows to achieve its goals. Yet, the institution remains humble and has been extending a helping hand to the local community, wherever needed. The introduction of the National Education Policy 2020, has allowed us to plan and develop our Institutional Development Plan for the next five years.

May these highlights inspire all our stakeholders to engage more in Outcome Based Education to focus on strengthening our initiatives, to bring in more innovative ideas, to aim at fostering and nurturing leadership, teamwork, excellence and transformational changes at SJEC.

My congratulations and thanks to the entire editorial team of Abhiyaana 2021 for their outstanding work in bringing out this magazine. Kudos to all of you!

With best wishes!

**Rev. Fr Wilfred Prakash D'Souza**  
*Director*

A handwritten signature in blue ink, appearing to be 'W. Prakash', written in a cursive style. The signature is located in the bottom right corner of the page, overlapping the printed name and title.



## ASST DIRECTOR'S MESSAGE

### **EDUCATION CAN EMERGE STRONGER THAN BEFORE IN THE POST-PANDEMIC ERA**

Blended learning and hybrid classrooms are the future in the post-pandemic era, which combines face-to-face sessions with technology-based asynchronous content.

We know more about COVID-19 today than we did in March 2020, when schools were first closed. When schooling went online in 2020, many students were more than excited. However, what was supposed to last just for a few weeks, turned out to be several months. Now, for the first time in 18 months, schools across the country are opening their doors for in-person classes.

The past year has been a challenge for teachers and students in terms of learning. Various issues such as internet connectivity, lack of concentration and capturing the students' attention in a virtual classroom proved to be a challenge. However, as schools reopen, many teachers are looking forward to teaching offline after long. Though teachers are happy to get back in action after many months of online teaching, there are several tools that they need to adopt in order to cater for students who are learning online and offline.

Teachers feel that the transition from a traditional chalkboard approach to a wholly digital one has impacted the quality of learning. At the same time, the parents observe that their children lack the zest to study, motivation and healthy competition that usually drives them to set their best foot forward, impacting the overall learning outcome.

Among many economic sectors, the higher education sector is undergoing a tectonic shift right now. What several futurists and education technologists have been forecasting for long, is now happening.

#### **Words of Gratitude:**

I remain ever grateful to SJEC for giving me a wonderful opportunity to learn and serve for 9 long years. I thank Bishop Emeritus Aloysius Paul D'Souza and Bishop Peter Paul Saldanha for blessings and guiding me throughout my tenure at SJEC. I thank wholeheartedly our former Director Rev. Fr Joseph Lobo, Assistant Director Fr Ajith Menezes and Counselor Rev. Fr Joseph Cardoza for their encouragement and support in my journey at SJEC. I cannot forget the company of former Principal Dr Joseph Gonsalvis. I remain indebted to Rev. Fr Wilfred Prakash Dsouza, Director-SJEC, Rev. Fr Alwyn Richard D'Souza, Assistant Director, Dr Rio D'Souza, Principal and Mr Rakesh Lobo, HR Manager for the joyful moments spent together and the love, care and concern showed towards me at SJEC. I thank the HODs, faculty, staff and students for your cooperation and friendship. I thank my office staff and auxiliary staff for their untiring support in all the endeavors here at SJEC. I pray God's Choicest Blessings on SJEC.

Long live SJEC!!!

With loving memories,

**Rev. Fr Rohith D'Costa**

*Asst Director*

## ASST DIRECTOR'S MESSAGE



**“Change is the only constant in life. Ones ability to adapt to those changes will determine your success in life.” - Benjamin Franklin**

For anyone to survive, it is not important to be the strongest or most intelligent, but to be more adaptable to change. We have all been witnessing a global impact of the Covid-19 pandemic and the enormous challenges the education sector has been going through, in particular. Uncertainty and confusion often follows change. The pandemic has disrupted an education system and we now have transformed from associating studies in a structured classroom environment to a more flexible online mode of teaching and learning. It is a digital transformation all around.

Students and teachers across the globe have all adapted so beautifully to the change in the way of teaching and learning and the transformation from offline to online for every individual has been remarkable. The change is witnessed even in other aspects of life. The flexibility to go back and forth, learn at your pace, maintaining time flexibility, etc. all seem to lead to a newer way of learning for students. Online is the new mantra!

Although there are challenges to be faced with online learning, I do believe that the integration of information technology in education will only get further accelerated and online education will become an integral part of school/college education. With a significant surge in the use of online learning through various learning apps, virtual tutoring and other online platforms for connecting, we are witnessing a 'flipped'-classroom model in education.

I wish our dear students of SJEC to be open to learning and develop the right attitude towards changes which are inevitable. May you develop the right skills for critical thinking and adaptability which are going to lead you to success. What is clear through this pandemic is the fact that knowledge has to be disseminated across borders far and wide. It is therefore incumbent upon us to explore the full potential of online technology and all that it has to offer.

Let us all come to terms with the new normal, focusing from what we have lost to what's new. Let each of us emphasize on the positive aspects of the developing situations. Let us, together, accept the changes and transform ourselves to embrace the circumstances. Transformation is growth!

With best wishes to the team of Abhiyaana 2021 and the SJEC family, may we look forward to transform ourselves and welcome another fruitful academic year.

**Rev. Fr Alwyn Richard D'Souza**  
*Asst Director*

A handwritten signature in blue ink, appearing to be 'Alwyn', written in a cursive style.

## PRINCIPAL'S MESSAGE



The year 2020-21 has been a crucial year in the history of the college, with the UGC granting the much-awaited autonomous status. The journey towards autonomy has been an arduous one for all involved, made even more grueling with the pandemic and its ensuing ramifications. Yet, we have endured and flourished! And that leaves me amazed! The resilience and grit that is built into the system is beyond reproach.

As with any rite of passage, the transformation from an affiliated college to an autonomous one came with all the usual trappings: the trial-by-fire, the walk-on-live-coals, the ritual bloodletting, ... it was all there. But we did not flinch, we held our own. And we have now started our journey on Mission Autonomy! Still, a lot more needs to be done and that will determine the ultimate success of our quest. While autonomy pinches hard in all the sensitive places, it also gives a degree of freedom to define curriculum and learning mechanisms which can change the very nature of the professional who steps out of the institution. This, of course, is a worthwhile goal to strive for.

What do we want our graduates to be, when they step out of an autonomous institution? I would daresay, they should primarily be autonomous themselves; better able to decide for themselves and to direct their energies at building successful careers while nurturing their dreams in every sphere. But they need to be effectively mentored at the crucial cusp of their life's journey that they spend at the campus. I feel the faculty who could be the best mentors are those that are able to leverage autonomy to their best advantage in harboring personal development, as well as institutional growth. That is why we have started focusing on faculty training and empowerment in critical areas such as mentoring, innovation and entrepreneurship.

New winds bring new hope and as the pandemic fades, new vistas are being forged even as we speak. As a chronicler of these aspirations, the college magazine plays an important role. Our editorial team has taken that to heart and toiled to bring out a truly remarkable compendium of what has been and with that, they deliver a promise of all that can possibly be! Cheers to them!

With best wishes to the editorial team of Abhiyaana 2021.

**Dr Rio D'Souza**  
*Principal*

A handwritten signature in blue ink, appearing to be 'Rio D'Souza', written in a cursive style.



# Editorial

Dear Reader,

Greetings to you!!

You have in your hand "Abhiyaana-2021" the college magazine of St Joseph Engineering College, Mangaluru. It captures the momentous moments of SJECians journey through the Transformation from Offline to Online. We have tried our best to make sure this memoir of SJEC helps you in recapitulating your eventful journey at SJEC.

As rightly said "A flower makes no garland". Thus, "Abhiyaana-2021" is not the outcome of the effort put in by an individual, but it is a compilation of the immense effort put forward by, first and foremost, Ms Jacintha Cordeiro, Graphic Designer, SJEC and the invincible editorial team.

We are grateful to Ms Preetha Aroza, Campus Counsellor, SJEC, for the proofreading.

We apologize for shortcomings and hope you will cherish our efforts.

Happy reading...



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# TRAINING AND PLACEMENT

## *Message from the Placement Officer*



**Ms Sangeeta Ferrao**  
Placement Officer

Dreams are extremely important. You can't do it unless you imagine it." —George Lucas

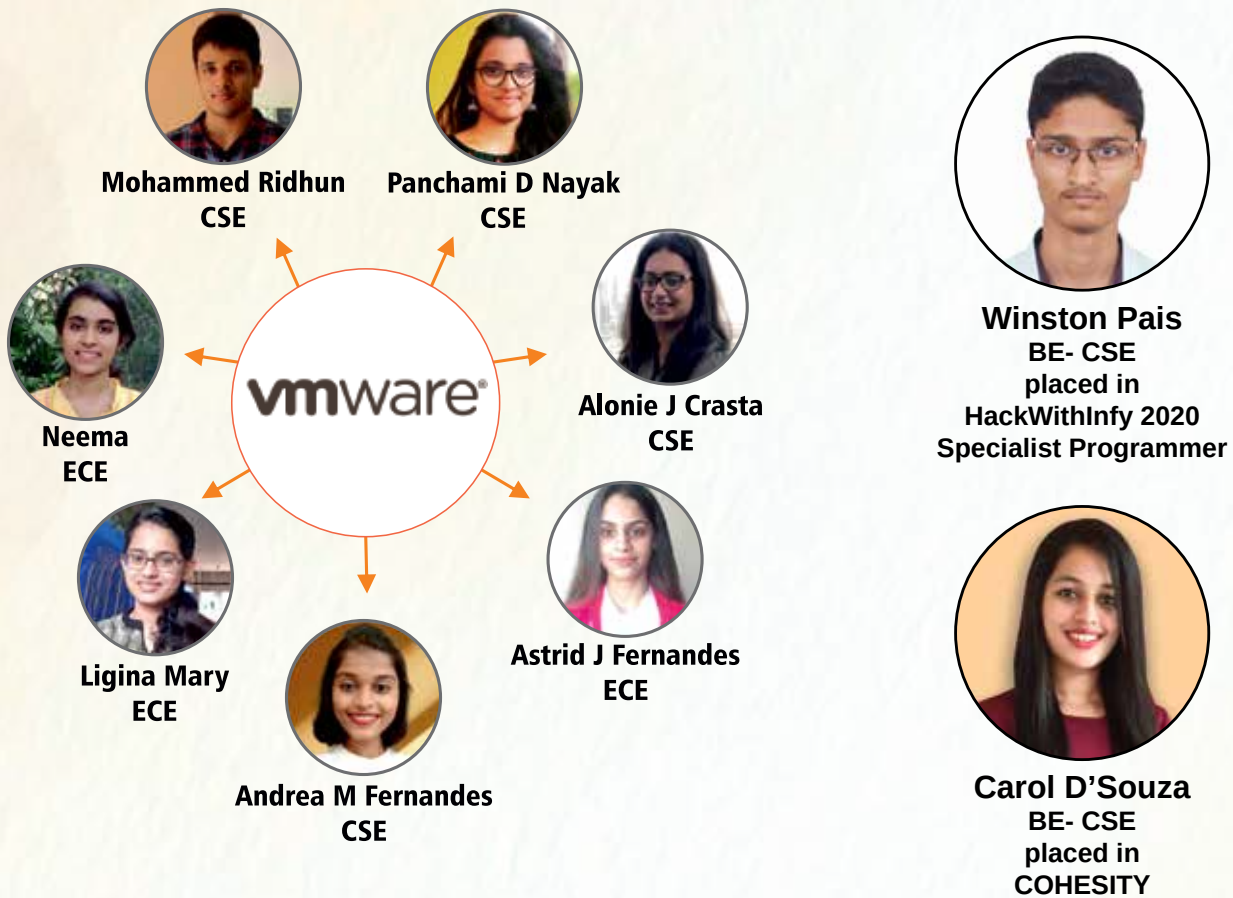
Industry expectations are changing widely every day. With Pandemic few skills have become utmost important in everyone's life. Every student has an aspiration to grow. They start a new chapter of their life, full of aspirations and dreams when they join the engineering or management course. Students are the most important part of an educational institution. They are the flowers that bloom over a period few years in their academic career to become successful, Successful not only to get a job or become an entrepreneur but to be a great Individual.

The department of Training and Placement ensures that each of these students is nurtured to the best. They are provided with various trainings on Professional grooming, aptitude, Soft Skills, Technical skills and of course the most important – Life skills. When they step up to the take up the companies that come on campus, they are the most confident and pleasant personalities equipped with the right attitude and approach. Students of SJEC are one of most preferred choices of many of the employers who are regular hiring partners on Campus. Over a period of time SJEC student quality has gained trust and confidence of highly esteemed organizations. Focus is on building an expert professional with basic Human Values. It makes one feel good to experience the trust placed in SJEC student quality by these companies. There is great satisfaction in seeing the heartwarming smiles and cheer that a successful placement process brings to the faces of our students. After months of meticulous planning they feel rewarded with an appropriate job in a company of their choice.

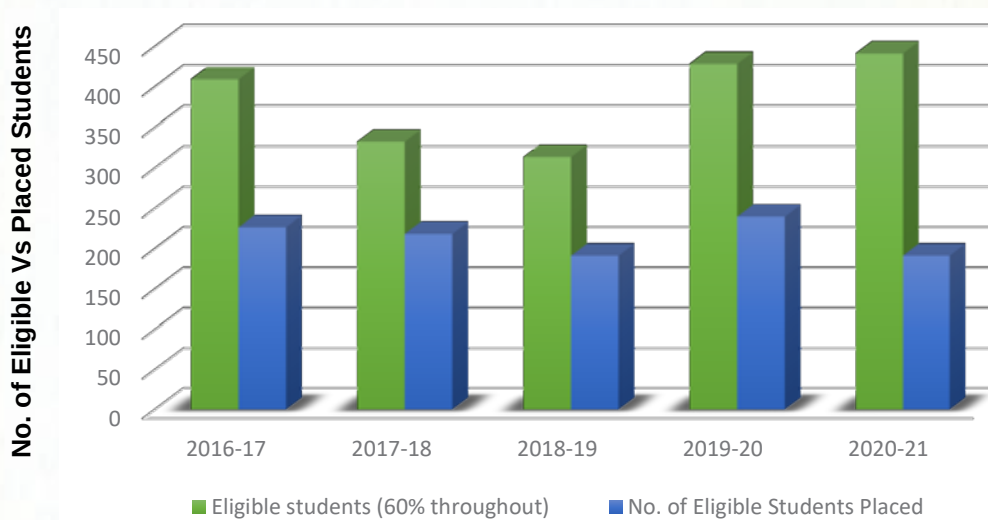
It is with great pride I share that every year we have our students being recruited for defense forces. To name a few of the esteemed organization like VMWare, Global ESoftsys, Wipro, TCS, Infosys, Anglo Eastern, BOSCH etc. are our regular campus hiring partners. This year we have seen an upscale in hiring numbers and also students bagging high package offers. We are extremely proud of our students for their wonderful achievements. The structured training and placement program has led to the achievements of these big numbers that are scaling new heights every year.


My heartfelt thanks to all the recruiting organizations who have bestowed their trust in SJEC and its students. We stay committed to deliver Professionals of value and Quality meeting the industry standards. I wish to thank the Management, Faculty and Staff of SJEC for always being a constant support in all the activities carried out by the department.

# Students - Placement Achievements (2020-21)



Eligible Vs Placed Students (2016-2021)





# COMPUTER SCIENCE & ENGINEERING



**Dr Sridevi Saralaya**  
*Professor & HOD*

## *HOD's Message*

I am indeed overjoyed to announce that in addition to introduction of Artificial Intelligence and Machine Learning, the CS department was able to start a new Computer Science and Business Systems (CSBS) program to address the growing needs of engineering talent with skills in digital technology. This curriculum strives to impart students with core topics of Computer Science with a blend of humanities and management science, thus enabling them to be aligned with Industry Revolution 4.0.

The department from time to time has been organizing webinars for students on latest topics in the industry to make them employment ready. Faculty development programs on Blockchain technology and recent Research areas were conducted to help faculty inculcate Research culture. The projects developed by our students were awarded with TEQIP and VTU funding.

It is indeed a great accomplishment by the faculty and the unstinted effort from students which has kept the learning mantle glowing during this extended period of lockdown during the second wave of the pandemic. I applaud the collective efforts of our faculty in helping the students to build up their confidence and come out with flying colours.

I congratulate the editorial team in their efforts towards bringing out this masterpiece of SJEC magazine.

# Congratulations!!

## TOPPERS

### IV Year BE-CSE



**Cleona Ginelle Concesso**



**Hazel Shefali John**



**Sheethal R**

### III Year BE-CSE



**Simonne Letetia Pinto**



**Lauren M Fernandes**



**Dhanya K**

### II Year BE-CSE



**Adithya K Shetty**



**Sharan Kumar**



**Samriddhi Umanath Shetty**



**K Divya Pai**

# DEPARTMENT ACTIVITIES

## MIND QUEST SYNOPSIS

Mind Quest is a non-technical event that was organised by Cipher Association, on 16 June 2021. The event was held from 3:00 pm to 7.30 pm. A total of 62 groups were involved in this extravagant competition



## Online Faculty Development Programme on “Blockchain Technology & its Applications”

Date: 4-6 March, 2021

The Department of Computer Science and Engineering of St Joseph Engineering College in association with CSI-SJEC Student Chapter organized a three day online Faculty development programme (FDP) on “Blockchain Technology & its Applications” from 4 to 6 March 2021. Dr Sridevi Saralaya was the convener; Ms Sunitha Guruprasad and Ms Renuka Tantry were the coordinators of the three day FDP.



FDPs and workshops  
attended by Faculty  
**115**

Online Courses  
**18**

Research Publications  
**5**



**Industry Interaction**  
113 students completed internship in various industries

# FACULTY ACHIEVEMENTS



## PhD Award

**Dr Shreenath Acharya**, Associate Professor, CSE Dept is awarded with Ph.D Degree from VTU, Belagavi for his research work titled Energy Efficient Cost Aware Dynamic Provisioning Mechanisms for the Virtual Machines in Cloud Environment, under the guidance of Dr Demian Antony D'Mello, Professor & HOD - CSE Dept, Canara Engineering College, Mangaluru on 02.04.2021.

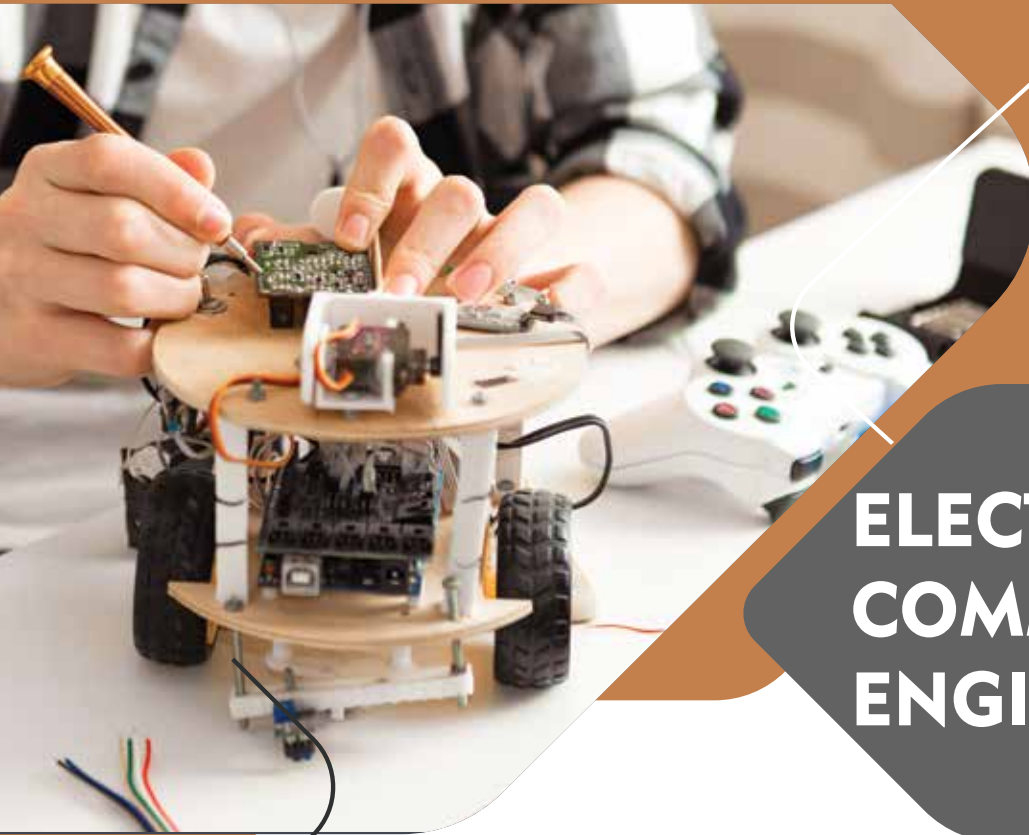


Four memorable years that I spent at SJEC have been enjoyable and immensely rewarding. The Computer Science department has great faculty and incredible opportunities, both of which helped me discover and foster my love for Information Technology .I am forever grateful! Without a doubt, choosing to study Computer Science at SJEC has been one of the best decisions I ever made.

To my juniors, I would say, focus is key. Identify your interests and be passionate. Learn what it takes to get there and evolve into the best version of yourself. Engage in technical clubs, associations and seize every opportunity that comes your way. Put yourself out there, this is your time – make the most of it.

- Crystal Fay D'Souza  
Class of 2020





# ELECTRONICS & COMMUNICATION ENGINEERING



**Dr Dayakshini**  
*Professor & HOD*

## *HOD's Message*

Covid-19 pandemic has brought drastic changes in our lives. One among the several changes that has happened due to Covid-19 is the way students and teachers interact. Covid has directly affected education system. WHO reports say that 1.2 billion students in 186 countries are affected by closures of schools and colleges due to the pandemic. In response to this situation, Educators are finding ways to ensure that learning of students continues through online mode and are also developing new study materials. Now it's the time to learn to live with Covid. Various video conferencing tools are very helpful to reach students on a regular basis. Virtual schools or colleges are new concepts in India, but it has been already implemented in some of the foreign countries. This is the reason India is facing problems in online teaching-learning methods. I am pretty sure that in the future we Indians will get accustomed to online teaching and learning.

Staff and students of Electronics and Communication Engineering Department have put a lot of effort to ensure that the learning happens continuously in virtual mode by adapting various learning management tools and active learning strategies. Rigorous Placements, Collaborations, Student Training Programs, Certification Courses, Faculty Development Programs, Webinars, Anusandana etc. are some of the evidences of success stories. This has filled with confidence and positivity in students to achieve their goals.

Once Bhagavan Buddha said some important things that we have to learn from water, "Adjust yourself in every situation that you encounter but most importantly find your own way to flow." We have to adapt ourselves to the new situations but at the same time find our own way to make our journey wonderful. Covid-19 pandemic has taught us these things and has opened up innovative teaching learning processes.

Abhiyaana is a platform for our students and staff to showcase their creative abilities, hidden talents, and aspiration for writing. It also portrays the achievements and provides a media for recognition of talent and hard work. I wish to appreciate and congratulate the Editorial team for bringing out Abhiyaana 2021 as per schedule.

# Congratulations!!

## TOPPERS

### IV Year BE-ECE



**Abhishek V S**



**Deeksha**



**Payal L Shet**

### III Year BE-ECE



**Sanjay Shankar Bhat**



**Kavyashree**

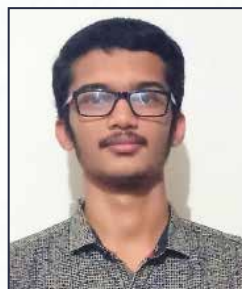


**Sharon Frank**

### II Year BE-ECE



**Lokanath Rajesh  
Prabhu**



**Jason Lynel Braggs**



**Muhammad Kaif M S**

# DEPARTMENT ACTIVITIES

## WORKSHOPS / FDPS / STTP

### IPR and Technology Transfer

Date: 05 January, 2021



**Resource Person:** Dr Iddya Karunasagar, Advisor (Research and Patents), Nitte University, Deralakatte and Dr Indrani Karunasagar, Director (Projects and DST-TEC), Nitte (DU).

**Objective:** To provide insights on the steps involved in applying patents, terms and conditions, time involved in processing the patent application by WIPO (World Intellectual Property Organization), Tips for selection of Journals and writing good research articles.

### Advanced Digital System Design using FPGA

Date: 15-27 March, 2021



**Resource Person:** Mr Prakash G, Lead Application Engineer, CoreEL Technologies Pvt Ltd Bengaluru, Mr Vijay Ganesh P C & Mr Mahesha Y, Assistant Professors, Department of ECE, SJEC, Mangaluru.

**Objective:** To enable students to analyze and design the basic building blocks of Digital Systems using FPGA, & at the end of the programme students were able to design a Microprocessor.

### Analysis of Eye Movement to Diagnose Balance Disorders

Date: 09 February, 2021

**Resource Person:** Dr. Srinivas D R, Co-Founder, Director, Product Innovation, Cyclops MedTech Private Limited, Bengaluru; Mr. Ajith S Rao, Founding Team Member and Chief Architect at Cyclops MedTech ; Mr. Niranjan M. Subbarao, Head Business Development, Cyclops MedTech Private Limited, Bengaluru.

**Objective:** To give insights on Fundamentals of Physiology of the eye and how the eye responds to the stimulus & to demonstrate the working and application of Balance-Eye Detector.



## Research Paper/Report Writing, Plagiarism and Ethical Issues

Date: 23-24 March, 2021

Resource Person: Dr Dayakshini, Dr Rohan Pinto, Ms Shama B N, Ms Jennifer Saldanha, Mr Keith R Fernandes, Faculties of Department of ECE, SJEC.

**Objectives:** The workshop was focused on giving insights on writing a research paper, ethical issues in research, use of Turnitin Software, writing project report & presentations using MS Word, Referencing using Mendeley. Workshop included hands on session on Latex tool for report preparation, Article writing, PhD Thesis Preparation, BibTex file generation and referencing in Latex.



## Insights on Optical Devices and Networks



Date: 25-26 March, 2021

Resource Person: Ms Radhika Ramesh, Product Engineer, Fiber Optic Services, Mumbai.

**Objectives:** To provide insights on the use of OPTSIM tool in the field of Optical Communication, potential areas for research in optical communication, interdisciplinary thrust areas for research, and use of OPTSIM as a simulation tool for the existing subjects.

## Designing Communication Systems – Wireless and 5G with MATLAB and Simulink

Date: 6-10 May, 2021

Resource Person: Mr Amith Kamath, Education Technical Evangelist, MathWorks; Mr Shashi Kumar J K, Application Engineer, CoreEL Technologies; Mr Kishore Siddani, Application Engineer, MathWorks; Dr Jagadeesha R Bhat, Assistant Professor, IIIT Dharwad; Dr Vidhyacharan Bhaskar, Professor, San Francisco State University, California; Mr Uvaraj Natarajan, Senior Application Engineer, MathWorks.

**Objective:** To provide the fundamental concepts and recent developments in Wireless Communication and 5G Systems.

## Predictive Analysis of Big Healthcare Data: Keep the Diseases at Bay

Date : 15 July, 2020

Resource Person: Dr Suvendu Mohapatra, System Architect (R&D) & MD (India Division), Volktek Corporation, Taiwan.

**Objective:** Provided insights on Big Data Analysis to predict future health conditions.



## Industrial Applications of Artificial Intelligence



Date : 27 July, 2020

**Resource Person:** Dr Mohanraj Vengadachalam, Data scientist, Nissan Motors.

**Objectives:** To provide insights on Machine Learning and Deep learning applications and real time business use cases in Industry.



## FACULTY ACHIEVEMENTS

Mr Anoop C V has won an award in the category “**Excellence in Performance of Teaching and Learning Centres**” by IUCEE during ICTIEE 2021.

Mr Keith Raymond Fernandes has won an award in the category “**Excellence in Accomplishments by IIEECP Certified Faculty**” by IUCEE during ICTIEE 2021.

Mr Keith Raymond Fernandes won the **Best Paper** award for the research paper titled “**The Mechanism to Combat Data Leakage Trojans in Circuits using Randomized Encoding**” in **2020 IEEE International Conference on Computing, VLSI, Electrical Circuits and Robotics (DISCOVER)** organized by IEEE Mangalore Sub-Section in association with IEEE Bangalore Section at Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, Udupi, India on 30-31 October, 2020.



## BEST PRACTICES



# STUDENT ACHIEVEMENTS



**Mr Sudeep Sapnil Gonsalves** of III Year ECE has Secured Fifth Rank in the International Internship Program on “Artificial Intelligence” conducted by Asia University Taiwan on 31 October, 2020.

**Mr Sudeep Sapnil Gonsalves & Team** received a fund of Rs. 2.9 Lakh

for the project titled “D&D Hybrid Brain Controlled Interfacing Goggles” from New Age Innovation Network (NAIN) - Dept of Electronics, IT, BT and S&T, GoK.



**Mr Elwin C D** of III Year ECE is recognised for his outstanding performance in an event conducted by IUCEE student summit 2020.



**Mr Sagar Nayak & Team** of III Year ECE founded the Start-Up in the campus to develop hydroponics, a method of growing vegetables and fruits without soil

**Mr Sagar Nayak & Team** of III Year ECE received a fund of Rs. 3 Lakh for the project titled “Autonomous and Gesture-Controlled Wheelchair” from New Age

Innovation Network (NAIN) - Dept of Electronics, IT, BT and S&T, GoK.



**Mr Satvik S, Mr Souhardha S Poojary, Mr Shervin Reeve Pinto and Mr Sourav M R** of III Year ECE

has been shortlisted in the first level scrutiny of “Chhatra Vishwakarma Awards (CVA)” 2020-21 for the project titled “Automated Rubber Milk Mixing Machine by Determining the Dry Rubber Content



of Latex” under the guidance of Ms Deepthi S R, Assistant Professor, Department of ECE.

**Mr Karthik K C & Team** of II Year ECE received a fund of Rs. 3 Lakh for the project titled “Plastic Recycling Machine” from New Age Innovation Network (NAIN) - Dept of Electronics, IT, BT and S&T, GoK.



**Mr Swaroop S Rai, Mr Suvira M, Mr T V Manoj and Ms Sukthi Sulaya J** of III Year ECE

has been shortlisted in the first level scrutiny of “Chhatra Vishwakarma Awards (CVA)” 2020-21 for the project titled “Automatic Medicine Dispenser” under the guidance of Ms Chaitra U R, Assistant Professor, Department of ECE.



**Mr Lohit & Team** of III Year ECE received a fund of Rs. 1.41 Lakh for the project titled “Women Safety Watch” from New Age Innovation Network (NAIN) - Dept of Electronics, IT, BT and S&T, GoK.

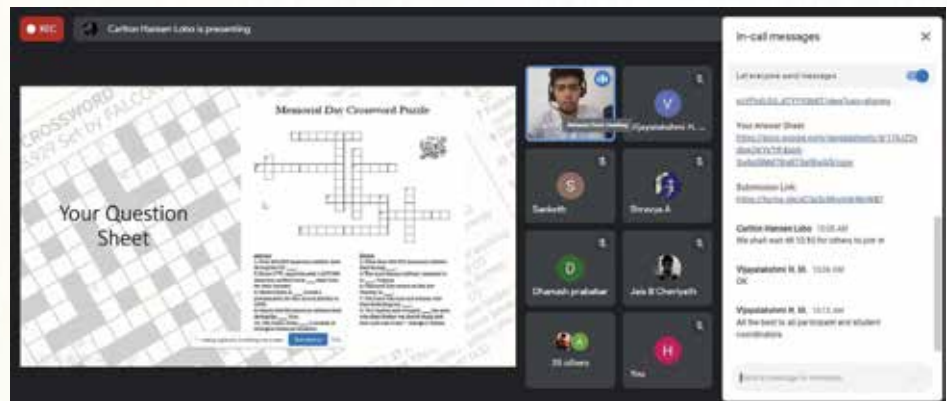


## EXTRACURRICULAR ACTIVITIES

### Clever Cross

Clever Cross was an Online Crossword competition which was open to B.E, MCA and MBA students from all branches. The theme of the event was "Electronics in our daily life".

The Event was conducted on 26 June, 2021.



### Shutter up

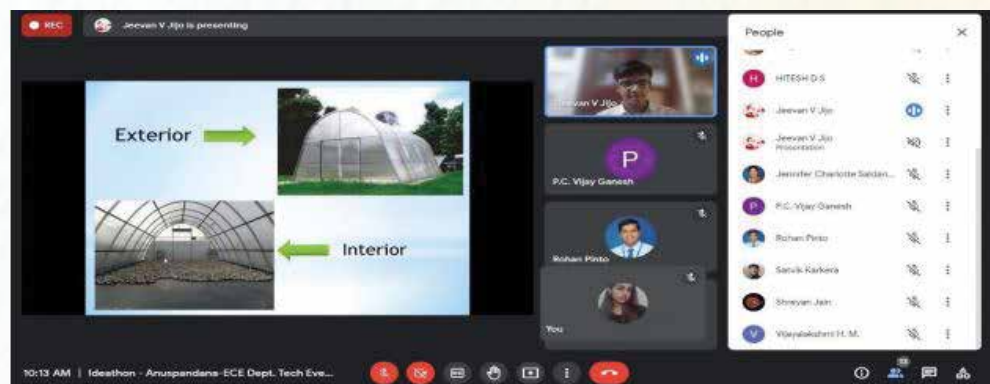
It is a Photography competition with a touch of technology. The participants had to click a photograph depicting the theme provided.

The Event was conducted on 21 June, 2021.

### Ideathon

Ideathon was an online presentation competition which was open to all branches. It was an opportunity provided to students to showcase their innovative ideas and presentation skills. It also enabled the students to learn from their peers.

The Event was conducted on 23 June, 2021.



## Alumni Message...



The faculties from whom I have learned at SJEC have always focused on teaching the concepts and building strong foundations. This has helped me in the longer run. Access to resources, approachable professors, the ambiance all adds up to a conducive learning environment and a memorable experience at SJEC.

**Chetan Pinto**

*ECE - 2014-2018*

*CPU Design Engineer, Qualcomm, San Diego, USA*



"The Electronics and Communication department at SJEC has played a major role in helping me grow as an Engineer. The department includes many talented staff who have wide knowledge across different domains in the field of Electronics and Communication. The staff here keep pushing their students, helping them not only grow technically but also develop critical thinking and innovative skills which could be applied during project development.

SJEC team includes very friendly and knowledgeable staff. The staff here not only help you during your college days but also afterwards which is quite rare. Studying at SJEC, you are treated more as a family than a student thus the bond keeps growing. The department also keeps motivating students through different talks by Industry experts where the students can learn and understand how the industry works differently. What makes SJEC stand out among their peers is investment in new technologies and tools which are Industry standard. I am happy to have been a part of such a wonderful Institute and I thank SJEC for shaping my Life."

**Anuj Virgil D'Souza**

*ECE- 2016*

*Sr. Software Engineer - Motor Controls,  
Stanley Black and Decker (Towson, Maryland, USA)*



"The years 2014-2018 have been some of the best years of my life. Each day at SJEC was about learning new concepts, experimenting, discussing upcoming tech/cultural events with my friends and ultimately having fun doing it. The name SJEC is a brand, with a distinguished group of lecturers and admirable facilities.

Electronics and Communications engineering is a comparatively difficult course in the field of engineering but made simpler by the commendable faculty of ECE department. During the time spent in college I developed a sense of confidence in myself that I could do this and whatever I set my mind to, and that has helped me in my workplace.

Choosing ECE at SJEC was one of the best decisions of my life. The Tech fest is a highlight of the year where we learn and have fun. With the passion to learn, and the support of a wonderful team of lecturers and facilities, one will have the best time of their lives here."

**Pooja Kamath**

*ECE - 2018 batch*

*Senior Systems Engineer, Infosys Limited*



ECE department gave me great exposure with respect to the field I'm currently in (Digital IC Design). The coursework structure, the outcome expected from the professors encouraged me to pick up my interest in that field. Labs were so informative, instructors and assistants were helpful when it came to answering any questions, big or small, as their goal was to help us understand rather than mug up the experiments.

The tech fest was a great platform and gave students like me freedom to open our minds to so many other challenges. Staff were always there to support us no matter what. They took responsibility, taught us to be responsible and helped us achieve our goal.

SJEC and ECE department helped me find a different side of me, helped me find my interests, goals, and gave me a path on where I can see myself accomplish my dreams.

**Sharanya Durgadasa**

*ECE- 2013-2017*

*Physical Design Engineer II -Ampere Computing, Portland*





# ELECTRICAL & ELECTRONICS ENGINEERING



**Mr Sathisha K**

*Assistant Professor & In-Charge HOD*

## *HOD's Message*

“Education is not the learning of facts but the training of the mind to think” said Albert Einstein. We as Engineering Educators have to ensure that the young minds are ignited towards Critical and ‘Out of the Box thinking’. “One has to be humble if he desires to acquire Knowledge”- this quote from the verse of Rigveda suggests the need of humility among learners to acquire credible and enduring knowledge useful for life. Energized by academic autonomy, the Department of Electrical and Electronics Engineering aims to provide industry based state of the art technical education along with holistic personality development of the undergraduate students.

‘Abhiyaana’ meaning Campaign is a creative reflection of a journey of SJEC from its inception to the threshold of academic autonomy. The Department has played a pivotal role in this challenging journey towards academic excellence. I thank all the faculty members, students and Alumni who have helped the Department to execute the characteristics of this pivotal role. The challenges of the Pandemic in the past year have been addressed in the best possible manner by all the teaching and non- teaching staff of the Department. Although, the pandemic forced us to modify our plans, our students were engaged in Live Interactive Online classes; Webinars from Industry representatives replaced Physical Guest Lectures; Online Student Training Programmes replaced face to face student workshops; Faculty and Alumni mentored Mini projects and projects replaced traditional Project work and many more.

I wish all the best to the creative and editorial team of ‘ABHIYAANA 2021’ for their valuable efforts in bringing out this issue.

I thank the management for giving whole hearted support for the implementation of NEP 2020 in SJEC.

# Congratulations!!

## TOPPERS

### IV Year BE-EEE



**Prathik**



**Aaron Joash Pinto**



**Kavya**

### III Year BE-EEE



**Jyoti Yalawar**



**Royston DSouza**



**Avinash Paul Fernandes**

### II Year BE-EEE



**Leswin Pinto**



**Karthik**



**Hemashree K P**

# FACULTY ACHIEVEMENTS



**Dr Sheryl Grace Colaco**, Professor from department of electrical and electronics has secured the Education Outreach Grant -2020 from International Society of Optics & Photonics (SPIE), USA... The proposal titled 'Igniting Young Mind towards Optics & Photonics' was chosen as one of the 19 International Winners in the world. This is the only project from India that has been selected by SPIE Outreach Grants for the year 2020.



## BEST PRACTICES



ONLINE LEARNING

# ALUMNI TESTIMONIAL

”

*The department of EEE at SJEC has supported me immensely in fulfilling my career aspirations. The faculty go to great lengths to provide a supportive and positive learning environment. The focus is not only on technical skills but also interpersonal skills which helped me a lot. It was a fun and rewarding experience to be a part of SJEC.*

**-Dhanush Nayak,  
2020 Batch**  
Electrical Engineer-1, Lam  
Research (India) Pvt Limited



”

*Life in SJEC was more of fun than just academics. It definitely made me feel like I am not so far away from my home. The life lessons it has taught me have had an immense impact in both my personal and professional life. I can say with 100% confidence SJEC has made me the person I am today. To the future generation searching for the best options to pursue your career, let me tell you, SJEC is going to be the best decision you will ever have made.*

**- Vinitsha Selma Velgas, 2018 Batch**  
Senior Test Engineer, Tata Elxsi, Bangalore



”

*It gives me immense pleasure to say with pride that I have completed my graduation from a wonderful institution St Joseph. SJEC is such a place where we can find an amalgamation of learning, fun, culture and sports. Quality education along with equal opportunity for co-curricular and extra-curricular activities made learning simple, understanding, fun and holistic. It has always helped me grow better personally and professionally. I also feel lucky that I belong to the EEE department at SJEC. The department had amazing teaching and non-teaching faculties who were very cordial and supportive in every aspect, which gave me an opportunity to excel in my area of interest. Also, the department is equipped with sophisticated labs which give us practical knowledge of the subjects. My journey of 4 years at SJEC is always memorable and will be cherished.*

**- Rakshith A C, 2016 Batch**  
Electrical Engineer- Burns and McDonnell Engineering India Pot. Ltd.



# STUDENT TESTIMONIAL

“

*My Journey at St Joseph Engineering College has been a wonderful experience. The College has all the facilities needed for the overall development of an Individual. The faculty are very supportive. Apart from the academics, there are several technical and non-technical clubs that one can be a part of and enhance their skills sets. I was a part of Team Terrorbull Robotics, which played a big role in my growth. My department (EEE) took keen interest in organizing talks from Industry experts and Alumni, which inspired me to do well.*

**-Prathik**

*8th Sem, 2021 Batch*



”

“

*SJEC is a place of transformation with enormous opportunities for growth both professionally and personally. It had done a sumptuous job imprinting the ability in me to learn and build a broad foundational knowledge provided by the wonderful faculties. Collaborative environment at SJEC helped me to develop skills in different domains and provided an opportunity to serve Terror Bull Robotics as Team operation lead. The culture at SJEC helped me to find my weaknesses and overcome them by right means. SJEC invests in students' growth and directs students' efforts for a successful career.*

**- Sandesh Nayak**

*8th Sem, 2021 Batch*



”



# MECHANICAL ENGINEERING



**Dr Sudheer M**  
*Professor & HOD*

## *HOD's Message*

### **“Only 21st Century teachers can inspire 21st Century learners”**

As all of us understand, institutions across the country are contending with a difficult, disruptive year. Teachers are concerned about the impact a year of online learning might have on academic performance of students. In order to address increasingly short attention spans and tech-savvy minds, it was necessary to take teaching needs to go beyond instruction and examination questions. Our faculty have gone through a unique learning journey to develop the right skills and mindset to inspire the 21st century learners. The virtual mode interactions with renowned academics and global experts helped our faculty to adapt to the changing classroom.

The Department of Mechanical Engineering has made every effort to strengthen the skillsets of students and make them industry ready through virtual sessions. The high impact learning journey delivered by faculty has ensured the expected academic performance and placement results. Faculty mentors have led with the empathy and heightened care during their interactions with students which ensured well-being.

The Department has made its own contributions in getting Autonomous Status and NAAC A+ grade to the college. The Department has also engaged its stakeholders to build confidence and now gearing up towards the implementation of New Education Policy 2020 in phases. We whole heartedly welcome the comments and suggestions from all our stakeholders in strengthening our Department.

We are sure that readers will be delighted to know the activities and achievements of the Department during the academic year 2020-21. Our compliments to the editorial board members for their effort in compiling this annual magazine ABHIYANA 2021.

Wish you all happy reading.

# Congratulations!!

## TOPPERS

### IV Year BE-ME



**Mahammad Sinan A S**



**Varun M**



**Raison C. D'Souza**

### III Year BE-ME



**Anushka S. Rao**



**Akhtar Ahsan Sayeed**



**Athul T**

### II Year BE-ME



**Gokul Prabhu K**



**Nahuel Arnold Fernandes**



**Sampreeth K C**

## DEPARTMENT ACTIVITIES

### Artificial Intelligence and Machine Learning for Mechanical Engineers

The Industry and Innovation Cell of Mechanical Engineering organized a technical talk on Artificial Intelligence and Machine Learning for Mechanical Engineers on 09/06/2021 from 3.00 pm - 4.15 pm. The event was hosted by the Department of Mechanical Engineering at St Joseph Engineering College under the aegis of its Industry Interaction Cell in association with Indian Machine Tool Manufacturers' Association (IMTMA). Faculties and students from various institutions had attended this event.

Mr. Avinash Kere, Consultant and Head, IMTMA, Pune explained about Artificial Intelligence and Machine Learning. In his talk, he mentioned that artificial intelligence and machine learning seems to be the current buzzword as everyone seems to be getting into this subject. Artificial Intelligence (AI) seems to have a role in all fields of science. AI, is broadly defined as the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. Machine learning uses statistical methods to allow machines to improve with experience.

### Facilities at Centres of Excellence - GTTC, Mangaluru

Mr Mruthyunjaya Gouda, Principal, GTTC, Mangaluru, conducted a talk on facilities at centre of excellence - GTTC, Mangaluru on 12 June 2021. The event was hosted by the Department of Mechanical Engineering at St Joseph Engineering College under the aegis of its Industry Interaction Cell in association with DesignTech. Students from third year mechanical engineering attended this webinar.

The objective of this programme was to give an overall introduction and exposing facilities available at GTTC, Mangaluru which would help students to carry out their project or internship.

Mr Mruthyunjaya Gouda gave an overview of Government Tool Room & Training Centre [GTTC]. Later the session was handed over to Mr. Nemoji Antony and Mr Srinivas Gopal, Designtech to explain the various lab facilities available in GTTC. The training structure and various activities of labs such as modeling and analysis lab, reverse engineering lab, manufacturing and machine lab, IOT lab, rapid prototyping lab etc were explained in detail.

After the presentation, the floor was opened for discussion and Mr Nemoji Antony and Mr Srinivas Gopal took on the queries which the students raised.

## FACULTY ACHIEVEMENTS

### Dr Sharun Mendonca, PhD

Dr Sharun Mendonca has successfully defended his PhD Viva and has been awarded the PhD for the research topic on "Experimental Investigation on the performance and emission characteristics of Biodiesel with aqueous Nanoparticles as Fuel Additive in CI Engine".



### Dr Binu K. G.

Dr Binu K. G. has secured the **BEST PAPER AWARD** in the track on Motivation of Students for Engagement for the paper titled - Sustaining Motivation of Engineering Students in India by Managing their Academic &



Affective Needs, presented in the Eighth International Conference on Transformations in Engineering Education ICTIEE-2021.

January 8-10, 2021. (Virtual Conference).



### Dr Shreeranga Bhat

**Best Paper Award** - "Constructive Methodologies to Overcome the Technological Barriers in Online Teaching-Learning Process", Authored by Sathyendra Bhat, Ragesh Raju,



Shreeranga Bhat, Rio D'Souza, Athokpam Bikramjit Singh, in the 8th International Conference on 'Transformations in Engineering Education (ICTIEE 2021)' powered by Indo-Universal Collaboration on Engineering Education (IUCEE) held on 8-10 Jan 2021 using online platform.



**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

Department of Engineering Organizes

**WEBINAR on BUILD YOUR OWN ROBOT**

31 August 2020 10.30 to 11.30 AM **OPEN TO ALL**



Mr Rakshith Kottian Mr Aldin Sequeira Mr Rajath C Koteskar  
Founders, AVISHKAR, Mangaluru

#Certificate will be provided

**ST JOSEPH ENGINEERING COLLEGE Mangaluru**

25th JULY presents **VIRTUAL MEET**

**PANELISTS**



**COFFEE AND CONVERSATIONS WITH THE CREW**  
Reimagine and Re-engineer your Choices Post-COVID

Register for the event @ <http://bit.ly/SJEC-VAM-1> and listen to our alumni talk about higher education, emerging skills, job opportunities, and a whole lot of fun stuff.

ADDED ATTRACTIONS: Performance by  
SHEENA MENDES, SHANMUKH SHANMUKH, NEELAN SERRAO

**BE THERE @ 10:00 am to 12:00 pm**

**OPEN TO ALL**

SJEC Virtual Alumni Meet #1

**St Joseph Engineering College**  
Mangaluru, Karnataka, India.

Department of Mechanical Engineering organizes

**SJEC ADIPATIUM Webinar Series** and Global Webinar on **ENGINEERING A FUTURE ON MARS**

November 13, 2020 (Friday)

India 9:30 PM to 4:30 PM (IST)	UK 9:00 AM - 1:00 AM (GMT)	South Africa 10:00 AM - 1:00 PM (SAST)	Reichardsburg 10:00 AM - 12:00 NOON (CST)
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This is the First Virtual Alumni Event in India

TOPICS: • Space launch systems • Solar and nuclear power generation • Automation for space farming, building, mining and for the production of Fuel • Mining in Space • Metallurgy and Fine materials • Chemical production • Rocket Fuel • Aspects of space exploration for Mars, including the elements of Mechanical, Electrical, Thermal, Structural Engineering and Computer Science.

College is launching a **SPACE TECH TEAM** to discuss and work on Space Technology Projects. In case you are interested to join in the team kindly register in the link given below.

<http://bit.ly/SJEC-SPACETECH>

For more info contact the Coordinator  
Mr Noel Shah, Assistant Professor, Department of Mechanical Engineering, SJEC  
Email: [nom@sjec.ac.in](mailto:nom@sjec.ac.in)

**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

Department of Mechanical Engineering organizes

**WEBINAR on: Finite Element Analysis/Application in Virtual Design Process**

For all pre-final and final year Mechanical Engineering Students

14 October 2020  
03:00 PM to 04:00 PM

Speaker: Mr Suresha Shenoy  
Managing Director  
PECCO Engineering Biotek, United Kingdom

APPLICABLE INDUSTRIES:  
• Aerospace  
• Automobiles  
• Heavy Engineering  
• Power and Energy

Cisco Webex Link will be sent to your registered e-mail.

REGISTRATION LINK: [bit.ly/SJEC-WFEAVDP-2020](http://bit.ly/SJEC-WFEAVDP-2020) on or before 13 October 2020 5:00 PM

**ONLINE LEARNING**

**Modeling and Visualization Webinar Series - #1**

**ST JOSEPH ENGINEERING COLLEGE MANGALURU** | **CADD CENTER**

THE DEPARTMENT OF MECHANICAL ENGINEERING  
St Joseph Engineering College - Mangaluru  
in association with  
**CADD CENTER - Mangaluru**

Presents a **WEBINAR on: Introduction to SOLIDWORKS**

04 August 2020 @ 3:30 pm to 5:00 pm

**Open for All**

RESOURCE PERSON  
**Mr Shivaprakash KP**  
Tech Leader at CADD Centre  
B. E Mechanical  
He has experience of over 9 years in the field of CAD training.

The webinar is an introductory session on getting started with SOLIDWORKS - a popular tool to design your ideas.

Register for the Webinar at:  
<http://bit.ly/SJEC-CADD-04>

Certificate will be provided on completion of the Webinar

**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

IE (India) SJEC Chapter  
in association with  
Department of Mechanical Engineering

Webinar on **Advanced Waste Management for Sustainable and Renewable Energy**

IE Coordinator: Dr Raju K / Dr Jayvardhana M L

Dr R Harshvardhan  
CEO, Sustainable Business Institute, Queensland University, Australia

<https://bit.ly/SJEC-AWMSRE-2021> Friday, 15 January 2021 3:00 PM - 4:00 PM

Certificate will be provided

**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

THE INDUSTRY INTERACTION CELL  
Department of Mechanical Engineering  
in association with  
Machine Tool Manufacturers' Association

presents a webinar on **ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR MECHANICAL ENGINEERS**

021 (to 4:15 pm)  
REGISTRATION LINK: <http://bit.ly/34RCiCP>

Mr Avinash Khare  
Consultant & Head  
Indian Machine Tool Manufacturers Association Pune

Coordinators:  
Dr Binu K C 9739866947 | [binuk@sjec.ac.in](mailto:binuk@sjec.ac.in)  
Mr Chiranth B P 9342477736 | [chiranthb@sjec.ac.in](mailto:chiranthb@sjec.ac.in)

Topics:  
• AI & ML in Industry 4.0 and 5.0  
• Applications of what AI & ML applications can do in Mechanical Engineering Industry  
• Role for the Academia in promoting AI & ML

E-Certificate will be provided to all participants.

**ST JOSEPH ENGINEERING COLLEGE**  
Mangaluru-575 028

DEPARTMENT OF MECHANICAL ENGINEERING  
In association with  
**K-tech Centre of Excellence in Aerospace & Defence**  
(K-tech CoE A&D), Bengaluru

is organizing a One day workshop on **DESIGN, DEVELOPMENT & LIFE-CYCLE OF AN AIRCRAFT**

Open for all Final and Pre-final Year students from any branch of SJEC

Important sessions to be covered:  
• Introduction to Aerospace Engineering  
• Introduction to 3D experience Design & Manufacturing  
• 3D Experience FEM (Simulation)  
• Model Based Systems Engineering  
• 3D Experience Electrical wire Routing

29 June 2021 10:00 AM to 5:00 PM

No Registration Fee  
E-certificates will be provided.

Interested students please register using following link  
[bit.ly/SJEC-KTECHW-29621](http://bit.ly/SJEC-KTECHW-29621)

Contact Faculty Coordinators  
Vijay Y S Assistant professor 9400200260 | [vjayy@sjec.ac.in](mailto:vjayy@sjec.ac.in)  
Vishnu Kumar K Assistant Professor 9611781213 | [vknishk@sjec.ac.in](mailto:vknishk@sjec.ac.in)

In commemoration of **Engineers Day**  
**St Joseph Engineering College** organizes

**WEBINAR on CONUNDRUM OF SCIENCE, ENGINEERING AND TECHNOLOGY AND STORY OF ENCHANTING WAVES**


**OPEN TO ALL**


JOIN US ON: 18 September 2020 (FRIDAY) 11:00AM to 12:00 Noon

SPEAKER  
**Professor Gopalan Jagadeesh**  
Chairman, Centre of Excellence in Hypersonics & Professor, Dept. Of Aerospace Engg. Indian Institute of Science (IISc), Bangalore

Registration Link: <http://bit.ly/SJEC-WCSET-2020>





**Department of Mechanical Engineering**  
 St Joseph Engineering College, Mangaluru

In association with  
  
**TORQUE**  
 Students Association  
 organizes  
**WEBINAR on:**

**PRE REQUISITES  
TO BE A DESIGN ENGINEER**

2 June 2021 @ 4.00pm


**Ashwin Royston Lobo**  
 Assistant Manager - Skill Development  
 CADMAXX Solutions, Bengaluru

For all ME Students

Registration Link : <https://forms.gle/oFZMnhNooXN9GIU37>

DEPARTMENT OF MECHANICAL ENGINEERING  
**ST JOSEPH ENGINEERING COLLEGE**  
 Mangaluru

  
**TORQUE**  
 STUDENTS ASSOCIATION  
 In association with  
  
 TECHNO-CHAT TECHNICAL INSTITUTE  
Learn From Experts - Build Your Career  
 Presents


**Free Webinar on  
CAREER OPPORTUNITIES  
IN  
MECHANICAL ENGINEERING**

31 December 2020 | 3.00 pm to 4.00 pm



**Speaker**  
**Praveen Shetty**  
 Managing Director  
 Techno-Chat-Technical Institute  
 Mumbai


Sponsored By  



Registration Link : [bit.ly/SJEC-FSCOME-2020](http://bit.ly/SJEC-FSCOME-2020)


**ST JOSEPH ENGINEERING COLLEGE MANGALURU**  
 DEPARTMENT OF MECHANICAL ENGINEERING


**TORQUE STUDENT ASSOCIATION**  
INVITATION

  
 Department of Mechanical Engineering, SJEC  
 &  
 Art of Living, Mangalore  
 Presents  
**Youth Connect**


 How will I manage all this??  
 Exams, Internships, Relationships??  
 Classes, Assignments, Jobs, projects??


**Smile, Laugh and Celebrate on  
7<sup>th</sup> November to Unlock the  
secret of balancing the LIFE**

**Speaker:**  
**Mr Prasanth V Pai**  
 Faculty, Art of Living



Dr. Sudheer M  
 HoD ME

Mr. Visathan Kalivar & Ms. Ranga M  
 Torque Association Coordinators

DEPARTMENT OF MECHANICAL ENGINEERING  
**ST JOSEPH ENGINEERING COLLEGE, MANGALURU**

  
**TORQUE**  
 STUDENTS ASSOCIATION  
 presents  
 WEBINAR ON

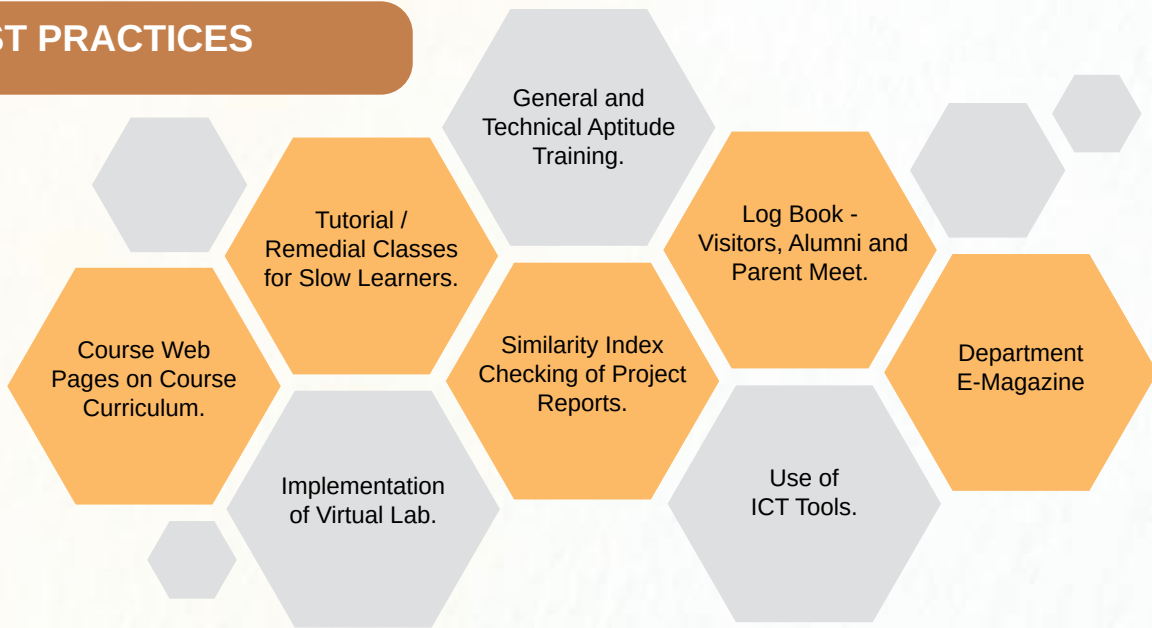
**ROAD TRAFFIC MANAGEMENT IN INDIA  
ROLE & RESPONSIBILITY OF YOUTH**

  
**Dr. Rohit Baluja**  
President, Institute of Road Traffic Education  
 Director, College of Traffic Management  
 (New Delhi)

**Registration Link:**  
<https://bit.ly/SJEC-WORS-2020>  
**Tuesday, 24th November 2020**  
**10:30am - 12:00pm**

FOR SJEC STAFFS & STUDENTS

## BEST PRACTICES



## STUDENT ACHIEVEMENTS



Akhtar Ahsan Sayeed was awarded the **Outstanding Performance for the achievement** in "Creating Social Impact"



during the 30 days Changemaker Program held from December 2020 - January 2021.

Satvik Karkera was awarded the **Outstanding performance for the achievement** in "Social Media"



during the 30 days Changemaker Program held from December 2020-January 2021.

## Student Speaks....

*"Our journey at St Joseph Engineering College has been absolutely amazing.*

*The faculty were knowledgeable and approachable. The years spent here were full of learning opportunities with the right blend of extra curricular activities and academics.*

*The college regularly organised workshops and events that helped students improve their technical skills. The college focused on soft skill development which made it easy for us to transition from college to work.*

*The college made best effort to provide placement opportunity for all students. It also provided some of us a chance to work as a faculty post completion of the course.*

*We are proud to have been a part of this institution".*



- Ramya B R & Archana Pai



# CIVIL ENGINEERING



**Dr Yajneswaran B**  
Professor & HOD

## *HOD's Message*

**“Learning gives creativity, Creativity leads to thinking, Thinking provides knowledge, Knowledge makes you great” said Abdul Kalam.**

Our lives have been drastically altered by the Covid-19 pandemic. The transformation from offline to online mode of study was the big challenge faced in the educational sector. Changes were made to this system as a result of the covid pandemic.

The Civil Engineering Department employs various learning management tools and active learning strategies to ensure that learning takes place continuously in virtual mode. All teaching and non-teaching staff of the Department have done their best to address the challenges of the pandemic during the past year. Online placement activities, conduction of online webinars by inviting Resource persons from premier institutions and alumni, (WICE 2020), Student Training Programs, Technical aptitude sessions, Faculty Development Programs, Research Conclave, online student project presentation competitions (CEPEX 2K20) etc. are some of the evidences of success stories.

Through Abhiyaana, our students and faculty can showcase their creative abilities, hidden talents, and aspirations for writing. I would like to express my appreciation and gratitude to the Editorial team for delivering Abhiyaana 2021 on schedule.

Thanks to all the faculty, students, and alumni who have assisted the Department in executing this pivotal initiative.

I wish all the best to the creative and editorial team of 'ABHIYAANA 2021' for their valuable efforts in bringing out this issue.

# Congratulations!!

## TOPPERS

### IV Year BE-Civil



**Shashank**



**Bhaskar Reddy**



**Welvina Olinda Veigas**

### III Year BE-Civil



**Ovin Rodrigues**



**Nelappa**



**Nadashri Narayan Naik**



**Ayesha Nafisa**

### II Year BE-Civil



**Alvina Vanessa  
Mendonca**



**Nisha L Gowda**



**Shreya Baliga B**

# DEPARTMENT ACTIVITIES



A Research Conclave - 2020 conducted from 15 to 17 September 2020 for Research Supervisors, Research Scholars, Faculty Members and PG Students of Civil Engineering.



A Two days' hands on Workshop on REVIT – Architecture Software conducted on 8 and 9 January 2021 for the final year students of Civil Engineering with Mr. Jackson Jebadurai P, Proprietor, CADD TechLABS Training Services as the resource person.



An Award Ceremony of National Level Virtual Hackathon of Green Tech Hackathon 2020 conducted on 25 March 2021 with Shri. N Shashi Kumar, Commissioner of Police, Mangalore City Police, Mangaluru as the Chief Guest.



# FACULTY ACHIEVEMENTS

## Karnataka State Council for Science and Technology Funding

- The Project titled **“Design of Tensegrity Model and Performance and Durability of Bacterial Concrete”** by Final Year Students **Mr Shreya J B, Mr Nideesh H K, Ms Charavi and Ms Ananya A Shetty** under the guidance of **Dr Bhaskar S** has received a fund of Rs. 6000/- from Karnataka State Council for Science and Technology.
- The Project titled **“Investigation on recovery of Precious Metal from E-waste and Design of Bioreactor”** by Final Year Students **Ms Welvina Olinda Veigas, Mr Abdul Baais A M, Ms. Kusuma Bovi and Ms Venilla Manikanta** under the guidance of **Dr Bhaskar S** has received a fund of Rs. 7000/- from Karnataka State Council for Science and Technology.
- The Project titled **“Study on the Efficiency of Sequential Batch Reactor (SBR) based Sewage Treatment Plant at SJEC Campus and to upgrade the existing system to automated Eco SBR”** by Final Year Students **Ms Rajith, Ms Flowrine Dsouza, Mr Sourabh S Shetty and Mr Sharan** under the guidance of **Mr Prashant Kurdekar** has received a fund of Rs. 5000/- from Karnataka State Council for Science and Technology.



The Project titled **“Hydroponics Irrigation for Conservation and reusage of Waste Water”** by Final Year Students **Ms Aparna Jogi, Ms Vibha Suresh, Mr Anvith S and Mr Nithesh Kumar** under the guidance of **Mr Ajeeth B** has received a fund of Rs. 6000/- from Karnataka State Council for Science and Technology.



The Project titled **“Storm Water Reduction using modified permeable Pavement”** by Final Year Students **Ms Sneha T K, Mr Aby Joy, Mr Aghil Bayakodan and Mr Mahammad Abdul Basith** under the guidance of **Mr Ajeeth B** has received a fund of Rs. 6000/- from Karnataka State Council for Science and Technology.

## PUBLICATIONS

In International Journals - 10

	Faculty	Students
FDP	05	
Webinar	11	
STTP	03	
Workshop	02	30
Online Course	16	73

# STUDENT ACHIEVEMENTS



**Mr Sheik Mohammed Zunain** selected for L & T's Build India Scholarship to pursue fully sponsored M.Tech in Construction Technology and Management at IIT-Madras.

**Mr Muralidhara V, Gaurav G Naik, Amith R and Roshan James Rodrigues** participated in Build – It: The Civil Engineering Hackathon held from 1st June to 27th July 2021. Organized by CMR Institute of Technology, Bengaluru.

**69+ Online certification courses** have been completed by the students during this pandemic through Coursera, Udemey and Virtual Internship (John Holland).

**Mr Swaroop Hiremani and Team**, Received funding of Rs. 2.55 Lakh for the project titled “Design and Fabrication of Portable Multi-Tasking Water Recycling unit for Domestic Application” from New Age Innovation Network (NAIN) - Department of Civil Engineering, IT, BT and S&T, GoK.

## VTU RANK HOLDERS



**Ms Pooja L** secured **Fifth Rank** in Civil Engineering at VTU level. She was awarded during VTU 20th Annual Convocation on 3 April 2021 at Visvesvaraya Technological University, Belagavi.



**Ms Jahnavi U Mulki** secured **Tenth Rank** in Civil Engineering at VTU Level. She was awarded during VTU 20th Annual Convocation on 3 April 2021 at Visvesvaraya Technological University, Belagavi

## *Student Speaks....*



It's easy to get into a cycle where you can lack motivation, confidence, and drive. But SJEC has a beautiful conducive atmosphere for creative and productive learning. It is a place of civility, friendship and good cheer.

**- Charavi J K**  
Final Year  
Department of Civil Engineering



St Joseph Engineering College has been the best part of my Educational journey so far. It has helped me improve both in terms of academics and demeanour. SJEC leads their students through a professional evolution which enhances their confidence and skill - Ideal place to learn and grow.

**- Jessica Goveas**  
Final Year  
Department of Civil Engineering



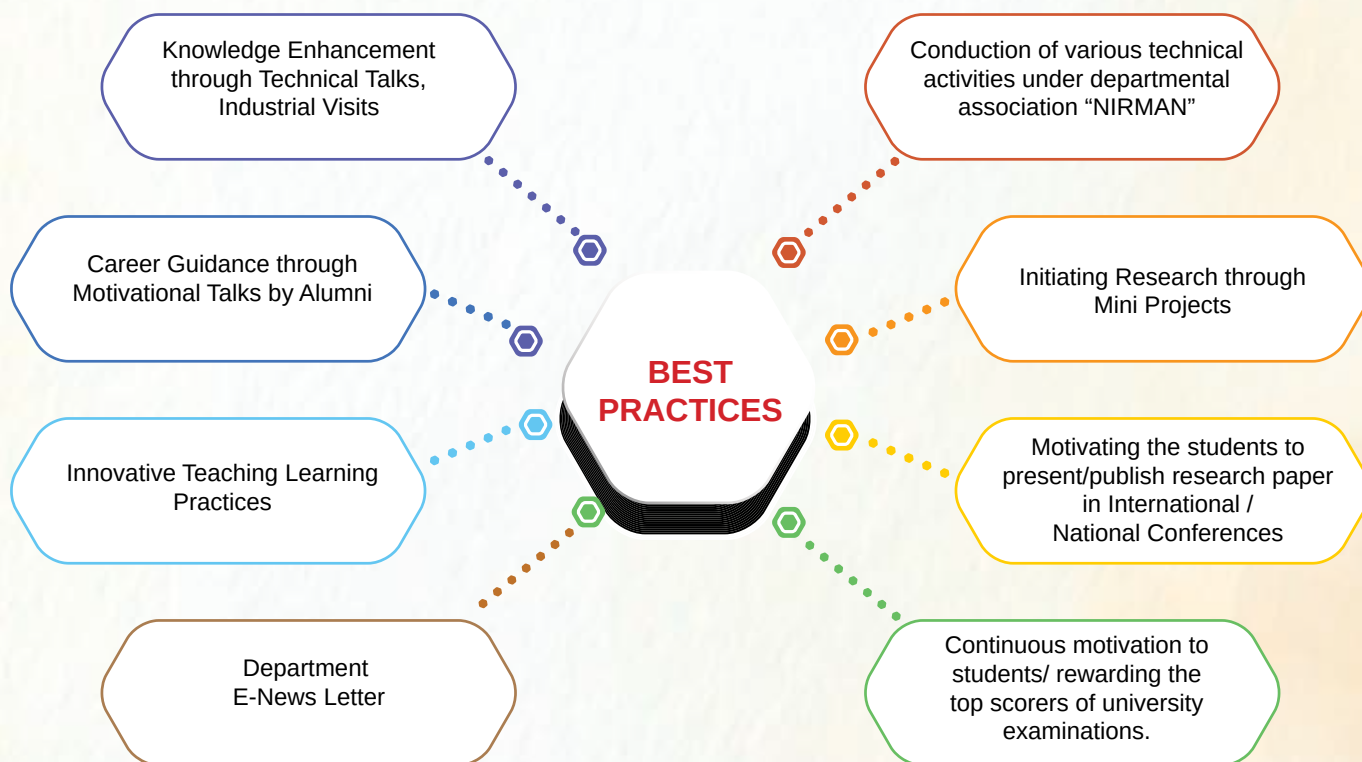
## Industrial Visit to Proposed PSC Bridge at Gurupura for the Final year students



The Department of Civil Engineering organized an industrial visit to the construction site of proposed PSC Bridge at Gurupura for final year civil engineering students as part of their curriculum. Total 51 final year students participated in industrial visit, accompanied by three faculty members Ms Vani D, Mr Sachin U and Ms Pranamya K.

The visit was aimed at enhancing the knowledge & visualization of process-involved pre stressing of concrete structures. The site engineer Mr Deekshith explained in detail to the students

about the total over view of the project. He explained in detail various structural elements of the proposed bridge starting from the foundation to the deck slab. Students got an opportunity to witness the post tensioning of 25m span prestressed concrete girder and could relate well with theoretical classroom study with the practical application. Students were very interactive with the site engineers and posed numerous questions for better understanding of different elements and process involved in prestressed concrete structures.



**WICE 2020**  
WEBINARS IN CIVIL ENGINEERING

**ST JOSEPH ENGINEERING COLLEGE**  
Mangaluru

DEPARTMENT OF CIVIL ENGINEERING

Organizes  
**WEBINAR**  
on  
**SMART TECHNOLOGY FOR SMART CONSTRUCTION**  
14<sup>th</sup> August 2020, 10.00am to 11.30am

POWERED BY  
Cisco  
**WebEx**

To Civil Engineering Fraternity

FREE REGISTRATION @  
[bit.ly/SJEC-WICE-2020-Webinar-6](http://bit.ly/SJEC-WICE-2020-Webinar-6)

**ConCroc' Nagesh Puttaswamy**  
Zonal Head South WT & RMDT  
Ultra Tech Cement Ltd., Bangalore

**ONLINE LEARNING**

**ST JOSEPH ENGINEERING COLLEGE**  
MANGALURU

Department of Civil Engineering  
in association with  
**Alumni Association**  
organizes  
**Webinar on**  
**Overview of a Construction Site and Activities Related to Site Office**

5 June 2021  
2.00 pm to 3.00 pm  
For 6th & 8th Semester  
Civil Engineering students

**Mr Yakshith Kumar S**  
Management Trainee  
Costing Department, Sobha Limited, Bangalore  
An Alumnus from the Class of 2019 (Civil)

Registration link: <https://meet.google.com/bcc-icla-uzp>

**WICE 2020**  
WEBINARS IN CIVIL ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING  
**ST JOSEPH ENGINEERING COLLEGE, MANGALURU**

In association with  
**ISTE-SJEC STUDENT CHAPTER**

Organizes  
**WEBINAR**  
on  
**SOIL- STRUCTURE INTERACTION AND DEEP FOUNDATIONS THEORY AND APPLICATIONS**  
07 July 2020, 10.00am to 11.00am

POWERED BY  
Cisco  
**WebEx**

For Students, Faculty & Research Scholars

REGISTER NOW:  
[bit.ly/SJEC-WICE-2020-Webinar-3](http://bit.ly/SJEC-WICE-2020-Webinar-3)

**Dr G R Dodagouda**  
Professor  
Department of Civil Engineering  
IIT Madras, Chennai

**ST JOSEPH ENGINEERING COLLEGE**  
Mangaluru-575 028

**CIVIL ENGINEERING TECHNICAL APTITUDE SESSIONS**  
organized by  
Department of Civil Engineering

Open to Third & Final year Civil Engineering Students

**TRANSPORTATION ENGINEERING**  
24 June 2021 @ 2.00pm  
**Ms Vishikha Krishna**  
Asst. Professor  
Dept. of Civil Engg.

**STRENGTH OF MATERIALS & DESIGN OF RCC MEMBERS**  
1 July 2021 @ 2.00pm  
**Ms Pranamy K**  
Asst. Professor  
Dept. of Civil Engg.

**CONCRETE TECHNOLOGY**  
8 July 2021 @ 2.00pm  
**Dr ESTR Chandra Sekhar II**  
Associate Professor  
Dept. of Civil Engg.

**ENVIRONMENTAL ENGINEERING**  
15 July 2021 @ 2.00pm  
**Mr Ajeeth II**  
Asst. Professor  
Dept. of Civil Engg.

ct: [Pranamy K - pranamyak@sjec.ac.in](mailto:Pranamy K - pranamyak@sjec.ac.in)

St Joseph Engineering College  
Mangaluru

Industry & Innovation Group  
in association with  
Department of Civil Engineering  
organizes  
Webinar on  
**"C Grade to CEO"  
- A CIVIL ENGINEERING START UP STORY**  
For Civil Engineering Students

9 June 2021  
4.00 PM to 5.00 PM

**Abhijith R Priyan**  
CEO, 'IsukkiAhoms', Bangalore

**St Joseph Engineering College**  
Mangaluru-575 028

Department of Civil Engineering  
organizes  
**SPECIAL ONLINE LECTURE SERIES 2021**

**ABOUT COLLEGE**  
St Joseph Engineering College (SJEC) is an institution affiliated to Vivekananda Technological University, Delgaon, Karnataka State, and is recognized by the All India Council for Technical Education (AICTE), New Delhi. The college has been accredited by NAAC with an 'A' grade. SJEC is registered under the trust 'Diocese of Mangalore, Social Action Department'. Established in 2002, the College offers top class education in Engineering, Business Administration and Computer Applications at UG, PG and research levels.

**ABOUT CIVIL ENGINEERING DEPARTMENT**  
A vibrant Department, established in 2002 aims to produce graduate engineers equipped for careers in the public and private sector encompassing areas such as structural engineering, geotechnical engineering, water resources, transportation, environmental and construction industries. Spacious and well equipped state-of-the-art laboratories and computing facilities are the mainstay of the Department which also includes Microbiology Research Laboratory. The Department also offers consultancy services for soil testing and concrete testing to construction sites in and around Mangaluru.

**DETAILS OF THE SESSIONS**

Saturday, 26 June 2021 @ 4.00pm  
**21EC1 - ENGINEERING PROBES - UTILITY OF MICROBES**  
By **Dr Shaaban S**  
Associate Professor  
Department of Civil Engg. SJEC

Saturday, 2 July 2021 @ 4.00pm  
**21EC2 - MECHANICS OF CEMENT**  
By **Dr ESTR Chandra Sekhar II**  
Associate Professor  
Department of Civil Engg. SJEC

Saturday, 10 July 2021 @ 4.00pm  
**21EC3 - AN INSIGHT INTO REMOTE SENSING AND ITS APPLICATIONS**  
By **Mr Rishabh Prakash Vignu**  
Assistant Professor  
Department of Civil Engg. SJEC

Saturday, 17 July 2021 @ 4.00pm  
**21EC4 - ELECTRO COAGULATION PROCESS FOR TREATMENT OF INDUSTRIAL EFFLUENT**  
By **Mr Prashant Kumbekar**  
Assistant Professor  
Department of Civil Engg. SJEC

Saturday, 24 July 2021 @ 4.00pm  
**21EC5 - VARIOUS METHODS OF CONSTRUCTION FOR MULTISTORIES STRUCTURES - A REVIEW**  
By **Dr Vishwanath II**  
Professor and Head  
Department of Civil Engg. SJEC

FREE REGISTRATION LINK  
<http://bit.ly/SJEC-CIVIL-LS2021>

Free Registration will be provided for all the participants

**Faculty members:**  
Head: **Dr Peter Paul Lathappa**  
Deputy Head: **Dr Prakash P. S.**

**Members:**  
Assoc. Prof: **Dr Vishwanath II**  
Asst. Prof: **Dr Rishabh Prakash Vignu**  
Asst. Prof: **Dr Shaaban S**  
Asst. Prof: **Dr Prashant Kumbekar**  
Asst. Prof: **Dr ESTR Chandra Sekhar II**  
Asst. Prof: **Dr Rajatxmi Chouhan**

**WICE 2020**  
WEBINARS IN CIVIL ENGINEERING

**ST JOSEPH ENGINEERING COLLEGE**  
Mangaluru

DEPARTMENT OF CIVIL ENGINEERING  
in association with  
**DEPARTMENT OF TRAINING AND PLACEMENT**

Organizes  
**WEBINAR**  
on  
**TURNING ENGINEERS INTO CIVIL SERVANTS**  
31<sup>st</sup> July 2020, 10.00am to 12.00pm

POWERED BY  
Cisco  
**WebEx**

REGISTER NOW @  
[bit.ly/SJEC-WICE-2020-Webinar-5](http://bit.ly/SJEC-WICE-2020-Webinar-5)

**Mr T P Sreenivasan**  
Former Ambassador of India  
Retired IFS Officer  
Permanent Representative of India to UN Vienna  
Governor for India of the International Atomic Energy Agency, Vienna

**WICE 2020**  
WEBINARS IN CIVIL ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING  
**SEPH ENGINEERING COLLEGE, MANGALURU**

In association with  
**INSTITUTION'S INNOVATION COUNCIL**

Organizes  
**WEBINAR**  
on  
**STARTING A RESEARCH PROPOSAL**  
17 July 2020, 10.00am to 11.00am

POWERED BY  
Cisco  
**WebEx**

FREE REGISTER NOW @  
[bit.ly/SJEC-WICE-2020-Webinar-4](http://bit.ly/SJEC-WICE-2020-Webinar-4)

**Dr Rajatxmi Chouhan**  
Assistant Professor  
Department of Electrical Engineering  
Indian Institute of Technology (IIT) Jodhpur



# DEPARTMENT OF BUSINESS ADMINISTRATION



**Dr Prakash Pinto**  
*Professor and Dean*

## Message from the DEAN

“

**T**he Covid-19 has resulted in academic institutions shut all across the world and the learners are out of the classroom. As a result, education has changed dramatically with the distinctive rise of online mode of learning whereby teaching is undertaken remotely and on digital platforms. With this sudden shift away from the classroom, the adoption of online learning will continue to persist post-pandemic leading to a blended mode of learning. The integration of information technology in education will be further accelerated and that online education will eventually become an integral component of education.

Further, the pandemic has brought up extraordinary challenges for business leaders and managers. We are facing the disruptions caused by the pandemic that is forcing us to adjust to different workflows and lifestyles. Business leaders and management practitioners need to take this pandemic as an opportunity to develop new managerial skills and establish effective management practices. Leaders need to reorient their activities to deal with the hard times. Social distancing norms have helped us realise that one does not always need to meet someone in person to communicate effectively. Technology has enabled us to transform ourselves from offline to online.

Our staff and students have been very active this academic year though they were working in online mode. The annual magazine of the college is a mirror of college life. Abhiyaana 2021 reflects the literary, academic, and important events celebrated in the college during the academic year 2020-21. The editorial team has demonstrated professionalism in bringing out Abhiyaana 2021. To the batch of 2021, I wish all happiness. I firmly believe that you will make SJEC proud.

*Congratulations!!*

## TOPPERS

### II Year MBA



**PONNAPU REDDY  
PRAVALIKA**



**NAIK JYOTHI  
JANARDHANA**



**POOJASHREE**

### I Year MBA



**MARTINA JUJE  
FERNANDES**



**VINOLA PREEMAL  
D'SOUZA**



**VARSHA K.D**

# FACULTY ACHIEVEMENTS

## TOTAL NUMBER OF FDPs / WORKSHOPS / CONFERENCES / STTP / WEBINARS ATTENDED BY THE FACULTY



## PAPERS PUBLISHED



**Dr Vinish P and Dr Prakash Pinto** published a paper titled “Antecedents of behavioral intention to use online food delivery services: An empirical investigation” in

Innovative Marketing journal, Volume 17, Issue 1, 2021.

Dr Prakash Pinto published a paper titled “Forecasting Areca Nut Market Prices Using The Arima Model: A Case Study Of India” in Annals of the “Constantin Brâncuși” University of Târgu Jiu, Economy Series, Issue 2/2021.



## Pursuing MBA at SJEC

### Best Practices

- Bridging Industry-Academia skill gap through organizing Expert talks by Industry persons on wide range of Management issues.
- Organizing National level Paper presentation Competition for MBA students under the badge “Rendition”.
- Conducting Workshop on Computing Skills for MBA Students.
- Organizing Outbound Training Programmes for MBA students on Overall development.
- Initiating Mini research projects for MBA students in order to equip them with research and analytical skills.
- Conducting visits to industries located in and around Mangalore City.
- Inviting Special lectures from Industry and Academic professionals.
- Supervising Book reviews on Bestselling Books having management orientation.
- Organizing Faculty Development Programmes in the areas like Social research, innovative teaching and Business Analytics.
- Coordinating and organizing National level fest for Undergraduate Students under the title “Yuvalakshya”.
- Organizing a National level Management fest for Postgraduate students under the brand name “Zephyr”.



## PhD AWARDED

Dr Vinish P, Assistant Professor, Department of Business Administration has been awarded the Degree of "Doctor of Philosophy" on 29 June, 2021 for the thesis titled "**Waiting Line Issues in Organised Retail outlets in Bengaluru, Karnataka**" by Visvesvaraya Technological University, Belagavi.

## STUDENT ACHIEVEMENTS



**Mohammad Shaman, II MBA** Secured **Gold Medal** in below 75kg Black belt division National level open karate championship 2020.



**Varsha C & Nikitha Zipporah Misquith**, secured **Runners up** in "**Ingenious-2021**" Inter-departmental Business Plan Contest organised by the Department of Business Administration, SJEC on 21st June 2021.



## Student Speaks....

SJEC has been a great contributor to the development of my personality. I have established my leadership, time management and team skills and have also been able to advance these skills to the whole new augment level. The infrastructure of SJEC is one of the finest in the Karnataka state. The best thing about this College and Masters of Business Administration Course is the cross-culture interaction between students from various parts of the India.

The best thing about being a student here is the number of additional opportunities that are available. I was initially attracted here by the College reputation, and my career goals. The best thing about the degree is having the freedom to think of an idea and test its practical application. I feel extremely lucky to be in an environment that allows me to conduct research on what interests me the most, so in all my time here I have never felt bored.

Apart from the lush green campus backed by astonishing infrastructure, College and the Department gave me a lead with a lifelong career excellence. From the very supporting faculties to excellent pedagogy, all helped me enhance my skills to the optimum and is still inspiring me to never give up. My education at SJEC, Mangaluru was an experience for lifetime and will stay with me forever. Many Outreach programs, soft skills development, Cultural fests, Inter/Intra College fests gave us a chance to apply Theoretical Knowledge into practice and a Friendly environment for us to Start an Excellent Career with proper guidance and building a new platform into the corporate world.

**PONNAPU REDDY PRAVALIKA**  
MBA (Batch: 2018-20)

**DEPARTMENT OF BUSINESS ADMINISTRATION**  
organizes

WEBINAR on  
**ANGEL INVESTMENT, VENTURE CAPITAL AND PRIVATE EQUITY**

Thursday, 12 November 2020  
3.00 PM - 4.30 PM

Open to BE & MBA students

Registration link: [bit.ly/SJEC-AIVCP-2020](http://bit.ly/SJEC-AIVCP-2020)

eCertificate will be provided



Mr Nandish Rao  
Founder-CEO,  
Bluenet's Capital Advisory  
Bengaluru

**DEPARTMENT OF BUSINESS ADMINISTRATION**  
organizes

WEBINAR on  
**LEGAL ISSUES IN BANKING**

Saturday, 21 November 2020  
11:45 AM to 12:45 PM

Open to all students and faculty

eCertificate will be provided

Registration Link:  
[bit.ly/SJEC-WLIB-2020](http://bit.ly/SJEC-WLIB-2020)



Dr Annapoorna Shet  
B.A.LL.B., LL.M., M.Phil., Ph.D.  
Assistant Professor, SJEC Law College,  
Central Post Graduate Studies & Research in Law  
Mangaluru

**DEPARTMENT OF BUSINESS ADMINISTRATION**  
organizes

WEBINAR on  
**STRATEGIC LEADERSHIP VS OPERATIONAL LEADERSHIP PRACTICAL INSIGHTS**

14 July 2020, 2.00 PM - 3.00 PM

OPEN TO ALL

Register now: [bit.ly/SJEC-MBAW-3](http://bit.ly/SJEC-MBAW-3)

eCertificate will be provided



Mr Bharath Kumar  
Chief Implementation Officer  
Eton Solutions, LP, North Carolina, USA

**Department of Business Administration**  
organizes

Webinar on  
**GST-A PRACTICAL OVERVIEW**

OPEN TO ALL

15 June 2021  
2.30pm to 3.30pm

Resource Person  
CA Shriram Kumar B  
Practicing Chartered Accountant  
Mangaluru

Registration link:  
<http://bit.ly/SJEC-GSTPO-2021>



# ONLINE LEARNING

**DEPARTMENT OF BUSINESS ADMINISTRATION**  
organizes

WEBINAR on  
**EQUIP YOURSELF TO LEAD CHANGE: LESSONS IN LEADERSHIP**

16 July 2020, 10.30am - 11.30am

OPEN TO ALL

Register now:  
[bit.ly/SJEC-MBAW-5](http://bit.ly/SJEC-MBAW-5)

e-Certificate will be provided



Mr Ashok Narayanan Patti  
Senior Firmware Principal Engineer  
Dell EMC, Bengaluru

**Department of Business Administration**  
organizes

Webinar on  
**JOURNEY TO CORPORATE WORLD**

For All UG & PG Students

10 June 2021  
3.00pm-4.30pm

Ms Wilma Merina D'Sa  
Industry Expert, Academician,  
Soft Skills Coach, Mentor and Consultant

Registration link: <http://bit.ly/SJEC-JCW-2021>



**Department of Business Administration**  
organizes

Webinar on  
**CAREER OPPORTUNITIES IN BANKING SECTOR**

Thursday, 15 July 2021  
3:00 PM - 4:00 PM

OPEN TO ALL

E - Certificates will be issued

Registration link:  
<https://tinyurl.com/MBA-COBS-15721>



Ms Anitha Parmar  
Head - Institution and College  
Connect BPSI Sector Skill Council,  
Mumbai

**DEPARTMENT OF BUSINESS ADMINISTRATION**  
organizes

WEBINAR on  
**BUSINESS APPLICATIONS OF BLOCKCHAIN TECHNOLOGY**

Saturday, 27 March 2021  
2.30 PM - 3.30

Ms Sulatha Pai Kasturi  
Senior Application Developer  
IBM Client Innovation Center, Switzerland

Registration Link: <https://bit.ly/SJEC-WBAIT-2021>



St Joseph Engineering College, Mangaluru  
Library & Learning Group  
and Research & Facilities Group  
in association with  
TURNITIN through VTU CONSORTIUM  
organizes  
WEBINAR on  
**TURNITIN - A TOOL FOR ANTI-PLAGIARISM**

Open to Research Scholars,  
faculty members & final year students  
of all disciplines of SJEC

17<sup>th</sup> JUNE 2021  
3:00 pm to 4:30 pm

Resource Person:  
Mr Ashay Prasanna  
Senior Consultant, PES - South Asia  
Turnitin, Bengaluru, Karnataka

TRAINING OUTCOMES

- To create awareness about the plagiarism and fair use of copyrighted work
- To create a culture of academic integrity

Registration Link:

Dr Prakash Pinto & Dr Sandhya Datta  
Chairpersons LIC & RFC - SJEC

Dr Felix D Souza  
Liberian - SJEC

Dr Gabriela Ristic  
Coordinator - SJEC



St Joseph Engineering College  
Mangaluru

**Department of Business Administration**  
in association with  
Industry & Innovation Group-SJEC  
organizes

Webinar on  
**Strategic application of 5 forces in food industry : challenges and opportunities. Case study of cashew industries**

25 June 2021  
3.00 PM to 4.00 PM

OPEN TO ALL

Registration Link: [bit.ly/SJEC-IIGW-25621](http://bit.ly/SJEC-IIGW-25621)



Kalbavi Prakash Rao  
Managing Partner Kalbavi Cashew  
Founder Chairman - CII Mangaluru District Council

**Department of Business Administration**  
Organizes

Online Professional Workshop on  
**FRANCHISING: WHAT'S IN IT FOR YOU?**

For MBA students

30 September 2020  
11.00am-1.00pm

Resource Person  
Mr Sanjay Duggal  
CEO-Stellar Eastern Franchising Advisory, Abu Dhabi, UAE  
& International Franchising Specialist

Registration Link:  
[bit.ly/SJEC-TATZF-2020](http://bit.ly/SJEC-TATZF-2020)





# DEPARTMENT OF COMPUTER APPLICATIONS



**Ms Sumangala N**  
*Assistant Professor  
& Incharge HOD*

## Message from the HOD

“

**T**he Department of Computer Applications offers MCA course with a mission to meet the global needs and challenges through training of professionals who can work with interest to support the society. The department has a team of experienced and motivated faculty members who are in process of tuning the young minds to make them globally competitive. The strength of the department is highly motivated students who understand the dynamics of the industry and upgrade their skills accordingly.

Learning is a continuous process and does not end with getting a degree because of the rapid advancements in computing technologies. Therefore our students are given a strong foundation in computer science and problem-solving techniques, and are made adaptable to changes. We believe that this approach to teaching-learning, coupled with practical experience gained during Industrial Training equips our students to handle the challenges posed by the software industry.

I extend my best wishes and greetings for the release of our college magazine 'Abhiyaana' which is a forum used for recording events, fond memories and creative writing. I congratulate the editorial team for making 'Abhiyaana' innovative and inspiring and all the students and staff coordinators who have made untiring efforts to bring out this magazine. I wish them all success .



*Congratulations!!*

## TOPPERS

### III Year MCA



**SUSHMITHA KOTIAN**



**SUSHMITHA P BOLAR**



**ABHIJNA D V**

### II Year MCA



**VIDYA P**



**RANJIT AMBIG**

### I Year MCA



**AFRATH AMAN**



**PANCHAMAL SHANTHADURGA  
KAMATH**



**VINUTHA**

# DEPARTMENT ACTIVITIES

The orientation program for the newly admitted MCA students was organized from 18 January 2021 to 22 January 2021. Students were formally welcomed and introduced to the campus, Department and the Department academic system.

The orientation sessions were conducted by Rev Fr Wilfred Prakash D'Souza, Director-SJEC, Dr Rio



D'Souza, Principal-SJEC, Ms Sumangala N, In-charge HOD- MCA. Mr Sathyendra Bhat J, Assistant Professor-MCA, Mr Hareesh B, Assistant Professor and CCC In



charge of SJEC, Ms Vaneesha V Rodrigues, Physical Education Director, Dr Felcy D'Souza, Librarian, Ms Sadhana Kumble, Assistant Professor-MCA, Mr Gururaja S, Assistant Professor-MCA and Mr Ragesh Raju, Assistant Professor-MCA.



## Online learning....



**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

Department of Computer Applications  
in association with  
**Alumni Association**  
Organizes  
An Interactive Webinar on

**THE JOURNEY FROM CAMPUS to CORPORATE**  
**POCKET MONEY to HARD EARNED MONEY**

**Saturday, 22 May 2021**  
**11:00 AM to 12:00 Noon**

Resource Person  
**Mr Cedan Christopher Misquith**  
Team Lead, Mobile Dev Team  
7EDGE Private Limited  
& An alumnus from the Class of 2015 (MCA)

Exclusively for the students of MCA! | Registration Link: [bit.ly/SJEC-MCA-A1](https://bit.ly/SJEC-MCA-A1)



# DEPARTMENT OF PHYSICS



**Dr Vincent Crasta**  
*Professor & HOD*

## *HOD's Message*

**“Success comes to those who work hard and stays with those, who don't rest on the laurels of the past.”**

The above statement is really fitting to SJEC as the college received many laurels during the previous academic year such as Autonomy, NAAC with A+ grade, AICTE-Idea lab etc. for the hard work, commitment and dedication.

SJEC provides an excellent academic ambience to impart knowledge that helps the students to identify their potential to serve the society. The focus of the college is refining the skills of the 21st century, creativity, critical thinking, communication and collaboration. Ability to think creatively and critically, to communicate clearly and to work with team prepares the students for their profession and life. The competent, committed faculty members serve as mentors for the students to develop the most preferred transferrable skills which can be applied in all professions and to compete globally. At SJEC we impart education to match the advancement of technology and globalization with the ethos moral and ethical Principles. We are indeed very happy that SJEC is implementing a well-balanced curriculum to ensure the students to face life's challenges.

I am really happy to know that the SJEC is bringing out the new issue of our magazine “Abhiyana” for the year 2021- 2022. This issue of the college Magazine will give an opportunity to the teachers and students to improve their creative skills.

I express my greetings to the editors and their dedicated committee for their treasured energies in bringing out this issue. I wish them all the best.

Providing study materials for better learning

Student motivation through effective mentoring process

Scientific discourses through webinars and workshops

Practice of outcome-based learning.

Effective Teacher Student Interaction

Adopting active learning methodology using ICT

## BEST PRACTICES

Applying for Research Grants

Research publications in International Journals

Endorsing ESR activities of college through outreach programmes

Promoting students to develop creative and team building skills through wall magazine activity

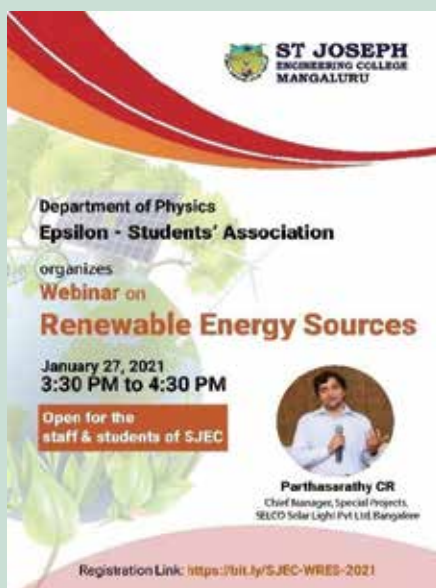
Additional attention to slow learner through extra classes

Workshops/  
Seminars/  
Technical  
Talks  
45

Online  
Courses  
7

Number of  
publications in  
international  
journal  
2

## ONLINE LEARNING



**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

Department of Physics  
Epsilon - Students' Association

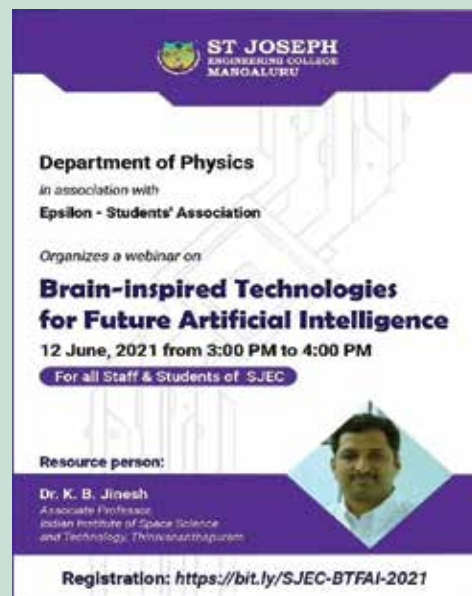
organizes  
Webinar on  
**Renewable Energy Sources**

January 27, 2021  
3:30 PM to 4:30 PM

Open for the staff & students of SJEC

**Parthasarathy CR**  
Chief Manager, Special Projects,  
SELCO Solar Light Pvt Ltd Bangalore

Registration Link: <https://bit.ly/SJEC-WRES-2021>



**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

Department of Physics  
In association with  
Epsilon - Students' Association

Organizes a webinar on  
**Brain-inspired Technologies for Future Artificial Intelligence**

12 June, 2021 from 3:00 PM to 4:00 PM

For all Staff & Students of SJEC

Resource person:  
**Dr. K. B. Jinesh**  
Associate Professor,  
Indian Institute of Space Science  
and Technology, Thiruvananthapuram

Registration: <https://bit.ly/SJEC-BTFAI-2021>



# DEPARTMENT OF CHEMISTRY



**Dr K. Jyothi**  
Professor & HOD

## *HOD's Message*

It gives me an immense pleasure to express my warm greetings and felicitation to all inmates of SJEC through ABHIYAANA 2021.

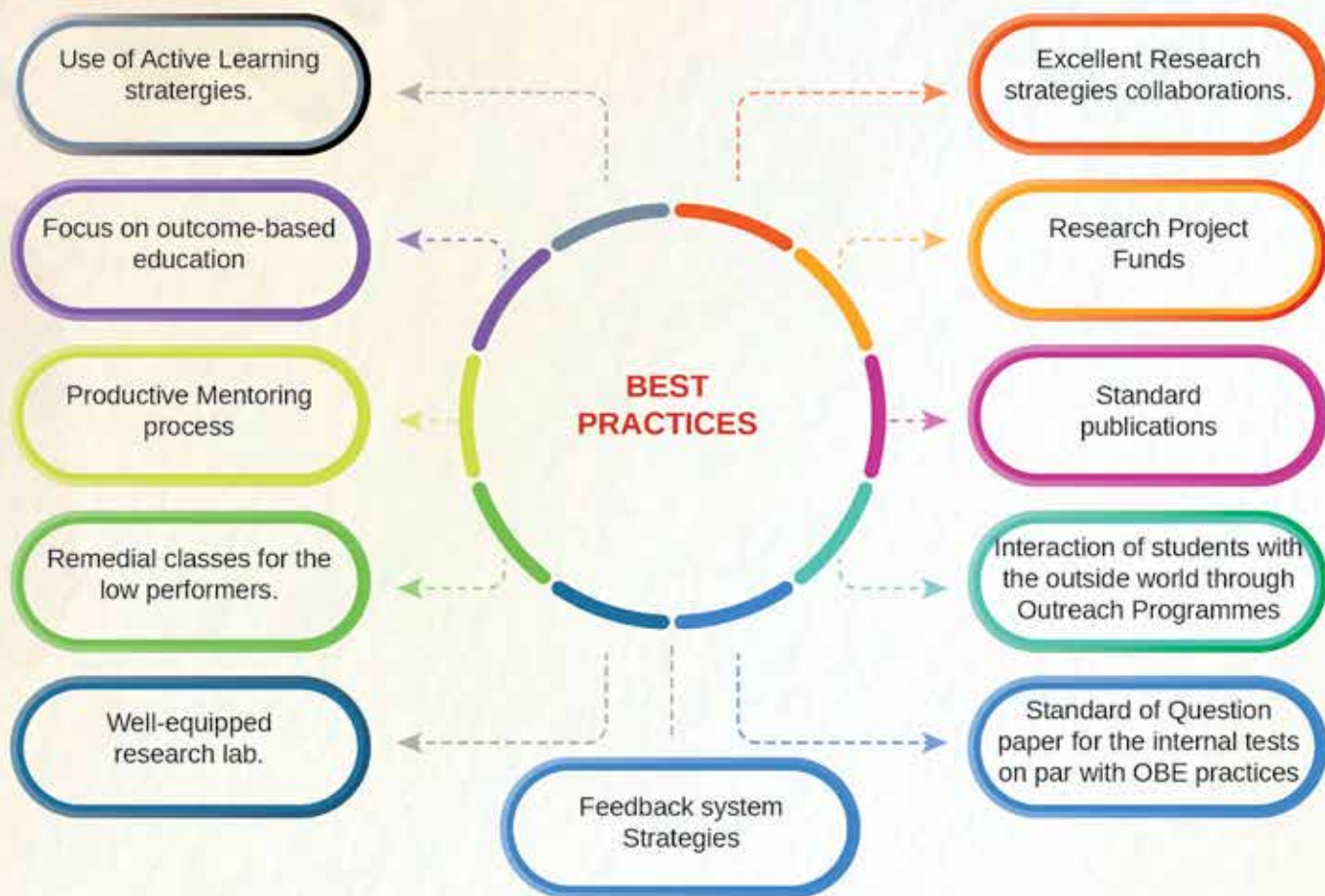
“Vision looks inward and becomes duty. Vision looks outward and becomes aspiration. Vision looks upward and becomes faith”.

The world today is changing at such an accelerated rate and we need to pause and reflect on this entire system of education.

Each issue of our college magazine is a milestone that marks our growth, unfolds our imaginations, and gives life to our thoughts and aspirations. It unleashes a wide spectrum of creative skills ranging from writing to editing and even in designing the magazine. ABHIYAANA 2021 is a perfect blend of creative thinking, art, knowledge and wisdom which vibrates in the inner soul of various stake holders. It is natural to find in this ambience, the intensive use of a variety of thinking activities, strategies and group dynamics to make this issue interesting and thought provoking.

I join with the staff of our department to wish all the outgoing students of 2021 batch in their endeavor to achieve their goals.

I congratulate the Editorial Board of 'ABHIYAANA' as an appreciation for the commendable efforts put forth by the team to bring out this excellent magazine in a pleasant format.





# DEPARTMENT OF MATHEMATICS



**Dr Ramananda H S**  
Professor & HOD

## *HOD's Message*

Kiran Mazumdar-Shaw, Indian entrepreneur said, "Ultimately, the greatest lesson that COVID-19 can teach humanity is that we are all in this together".

Yes, it was a challenging situation for teachers as well as for students to shift from offline to online learning.

Various issues came up while moving from offline to online learning such as , how to provide informal social interactions? how to ensure students' attention and active participation? The pedagogies that work for classroom teaching do not work for online teaching. We teachers at SJEC have attended and completed some of the online courses, so we were in a good position to face these issues.

We are happy that our teachers did their best to teach the students and even students cooperated well during this critical time.

This College magazine is going to give you a lot of information about how our college students have continued their journey of learning even during pandemic.

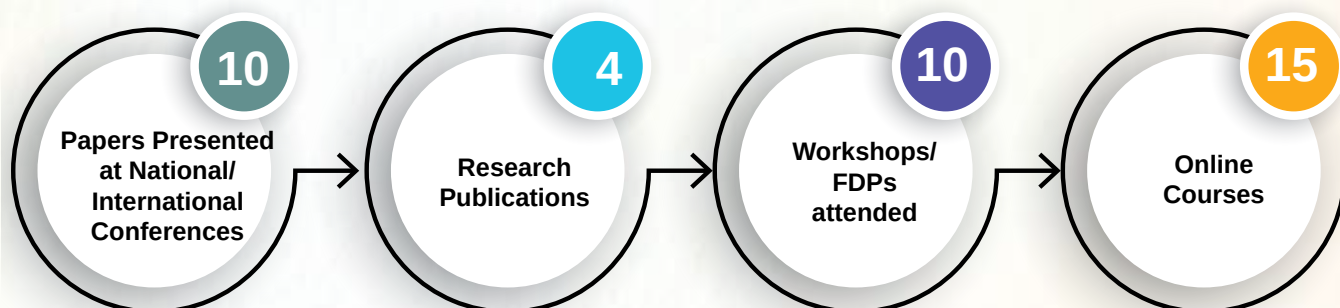
I congratulate the editorial board on its diligent efforts in bringing out this magazine.

# DEPARTMENT ACTIVITIES

The Department of Mathematics under the SIGMATHS Association provided the first year BE students an opportunity to work as a team to engage and improve their modelling skills through the Mathematical Model Competition in the month of February 2021. 5 teams submitted mathematical working models namely Hexa-Tire, Pythagoras Theorem model, Probability-Casino Roulette game, Trigonometric Ratios model and Electronic Laplace Transform board. The teams presented their model and explained the working and mathematics behind the model. The event was judged by Dr Ramananda H S, Dean-SW and Dr Shubha V S, Assistant Professor, Department of Mathematics. Ms Jyotsna A DSouza, Coordinator-SIGMATHS compered the event.



# FACULTY ACHIEVEMENTS





**ST JOSEPH**  
ENGINEERING COLLEGE  
MANGALURU

DEPARTMENT OF MATHEMATICS  
organizes  
**WEBINAR**  
on  
**APTITUDE AND LOGICAL REASONING**  
15th July 2020, 9.30 A.M - 11.30 A.M

**Mr Fayaz**  
Aptitude Trainer

**OPEN TO ALL**

Free Registration | eCertificate will be provided  
Exclusively for those taking up competitive exams/placements  
REGISTRATION LINK: [bit.ly/SJEC-MMW-2](http://bit.ly/SJEC-MMW-2)

**ST JOSEPH**  
Engineering College  
Mangaluru

DEPARTMENT OF MATHEMATICS  
presents  
**WEBINAR**  
on  
**FINDING THE BALANCE**  
"PASSION & PROFESSION"

Wednesday 12 August 2020  
12 - 1 PM

**OPEN TO ALL**

**FREE REGISTRATION**

Registration Link: <http://bit.ly/SJEC-MW-3>

**Ms. Ashwini Shenoy**  
Author  
Automotive Engineer/PSM  
Aptiv Automotive  
SJEC Alumni Batch - 2014

eCertificate will be provided

## ONLINE LEARNING ....

**ST JOSEPH**  
ENGINEERING COLLEGE  
MANGALURU

DEPARTMENT OF MATHEMATICS  
presents WEBINAR on  
**NEW GENERATION CYBER CRIMES**  
Wednesday, 21 October 2020  
2.30 PM-4.00 PM

**Dr Ananth Prabhu G**  
B.E., MBA, M.Tech, DCL, Ph.D, Post Doctoral Fellow  
Professor in Computer Engineering  
Cyber Security & Cyber Law Trainer

**FREE REGISTRATION**

Registration Link: <http://bt.ly/SJEC-WNGCC-2020>

eCertificate will be provided for all participants

**ST JOSEPH ENGINEERING COLLEGE**  
Vamanjoor, Mangaluru

DEPARTMENT OF MATHEMATICS  
organizes  
WEBINAR on  
**VEDIC MATHEMATICS & ITS APPLICATIONS**  
06 JULY 2020, 10.00 am - 12.00 Noon

**OPEN TO ALL**

**Prof. S G Raghavendra Prasad**  
Assistant Professor  
Department of Information Science and Engineering  
R V College of Engineering, Bengaluru

REGISTRATION LINK: [bit.ly/SJEC-MMW-1](http://bit.ly/SJEC-MMW-1)

Free Registration | eCertificate will be provided

## BEST PRACTICES

- Periodical meetings with the faculty to discuss about students problems in academics and other facilities.
- Monitoring attendance of the students, warning students and sending information about attendance shortage to the parents by registered post
- Conducting remedial classes for slow learners, lateral entry students and students failed in semester examinations
- Encouragement for the faculty to become Internationally certified Engineering Educator
- Individual guidance to the students who are interested to write GATE examinations in Mathematics part of the question paper
- Project guidance and Internship Guidance to PG Mathematics students through MOU
- Slow Learners Classes, Lateral Entry Classes, VACT- Aptitude classes



# DEPARTMENT OF PHYSICAL EDUCATION



**Ms Vaneesha V Rodrigues**  
*Physical Education Director*

## *Message from Physical Education Director*

**“Don’t be afraid of moving slowly, be afraid of standing still” – Milkha Singh.**

Regular exercise and physical activity promotes strong muscles, bones, it improves respiratory, cardiovascular health and overall health. This Pandemic focused many of us to follow healthy and active life style.

Sports helps to enhances teamwork and leadership skills, self-discipline and dedication, accepting the failure, relieves stress and anxiety and many more.

SJEC has been providing ample opportunities and facilities to staff & students to follow active life style, to focus on fit body and fit mind. Let us all slowly focus on building an active life for better and healthier India.

I wish everyone, especially the outgoing batch of SJEC all the very best for achieving greater success.

## INDEPENDENCE DAY - 2020

Rains gave way as SJEC welcomed India's 74th Independence Day with its traditional celebrations held in front of the Administrative Block.

Leaders of the Institution, Deans, Heads of the Departments, Faculty, Staff, Security Team and Students gathered to celebrate the 74th year of freedom. The celebrations commenced with a patriotic song by Mr Ashwin Shetty, Assistant Professor, Department of Mechanical Engineering that kindled the nationalistic spirits in all present.

Dr Rita Noronha, Director, Centre for Development Studies and Education, Mangaluru graced the occasion as the Chief Guest. She hoisted the flag and addressed the gathering. The Director of the Institute Rev. Fr Wilfred Prakash D'Souza along with Chief Guest planted a sapling to mark green SJEC Campus.

The celebration concluded with wishes, sweets and the pride of being an Indian all around!



## REPUBLIC DAY 2021

Commemorating India's 72nd Republic Day, the staff and the students of St Joseph Engineering College, here, got together to celebrate a patriotic day on the campus.

Dr Vincent Crasta, HOD-Physics was the Chief Guest on the occasion. Rev. Fr Wilfred Prakash D'Souza, Director-SJEC, Rev. Fr Alwyn Richard D'Souza, Assistant Director-SJEC, Dr Rio D'Souza, Principal-SJEC, Rakesh Lobo, HR manager-SJEC were also present.

The celebrations began with a patriotic song followed by the unfurling of the National Flag by the Chief Guest. The Security Personnel of SJEC led the gathering in saluting the National Flag and rendering the National Anthem.

In his address, Dr Vincent Crasta called upon the youth of today to contribute to the building of the nation, to renew the tasks at hand with greater vigour to make India a world power, to take India to its rightful place in the world and to make this country a better place to live in for the generations to come.

The celebration concluded with heart filled with happiness and patriotic fervour all around!



Online learning.....



**ST JOSEPH**  
ENGINEERING COLLEGE  
MANGALURU

DEPARTMENT OF PHYSICAL EDUCATION  
organizes  
WEBINAR  
on  
**BASIC CONCEPTS OF  
CHESS**

Tuesday, 28 July 2020, 11.30 am to 12.30 pm


**Expected Audience:**  
School students and anyone  
interested in the topic

**Ms Ivana Maria Furtado**  
II year Civil, SJEC  
An International Gold Medalist in Chess



**FREE REGISTRATION**  
eCertificate will be provided

Register now: [bit.ly/SJEC-PEDW-1](https://bit.ly/SJEC-PEDW-1)



**ST JOSEPH**  
ENGINEERING COLLEGE  
MANGALURU

Department of Physical Education  
organizes  
WEBINAR on  
**Yoga for Life**

11 August 2020, 2.30 pm to 4.30 pm

**Resource Person:**  
**Ms Venilla Manikanta**  
Diploma in Hatha yoga  
3<sup>rd</sup> year, Civil Engineering, SJEC

**EXPECTED AUDIENCE:**  
Anyone  
interested  
in the topic

**Requirements: Yoga Mat**

Free Registration @ [bit.ly/SJEC-PEDW-2](https://bit.ly/SJEC-PEDW-2) E-Certificate will be provided



LIBRARIAN'S MESSAGE

# CENTRAL LIBRARY

In the education sector, online learning has emerged as an elixir to address the restrictions imposed in the wake of COVID-19 pandemic and considered as a feasible option to overcome the challenges. The internet and web technologies have created a new and unparallel environment enabling the libraries to enhance and strengthen the research, teaching and learning even in this difficult and uncertain time. The concept and practice of providing remote access to e-resources was not new, but the user friendly way adopted by the Central Library of SJEC and the number of resources made available to the fraternity in support of academic and research activities during the pandemic is exemplary.

Various virtual services such as Plagiarism checking, Grammerly services, Mobile Library App services, inter-library-loan services, journal finder services etc. were offered during the pandemic lockdown period. We also worked closely with our stakeholders to provide the e-books, streaming videos and other electronic content needed to transition courses online. The Library also organized user awareness programmes, competitions, and webinars to the academic fraternity virtually. Beyond this, the Library has brought together open access resources such as National Digital Library of India (NDLI), Shodhganga e-thesis repository, Directory of Open Access Journals & Books, e-question papers onto a single page and made these available for our stakeholders through the Library web portal in anticipation to the information need. We look forward to the continued support from all our stakeholders and publishers in the future years to come.



**Dr Felcy D'Souza**  
*Librarian*

Best wishes to the editorial team of Abhiyaana 2021.

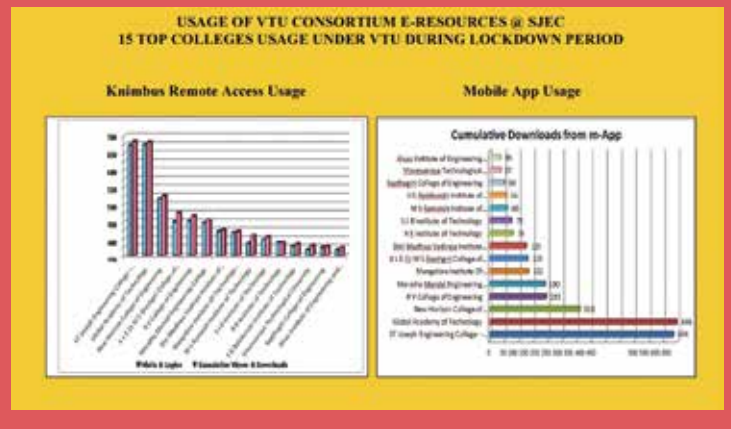
## CENTRAL LIBRARY

of SJEC is a “Gateway to Discover, Explore and Learn”. It being an integral part of academic and research work in the campus provides state-of-the art facilities and innovative services to its stakeholders. The Library has a fast growing collection in the form of books, journals, technical magazines, thesis, project reports and e-resources. Its extended facilities to the Alumni’s are very much appreciated. The Library provides very conducive environment for study, reading, innovative research and collaborative activities in the Library.

**Library is an active member of VTU Consortium, DELNET and National Digital Library India**

## ACHIEVEMENT

Top user of e-Resources among 15 top colleges under VTU Consortium Knimbus Remote Access Portal and Mobile Library App during COVID-19 lockdown period 2020-21.



## ORIENTATION/ TRAINING PROGRAMS / WORKSHOPS CONDUCTED

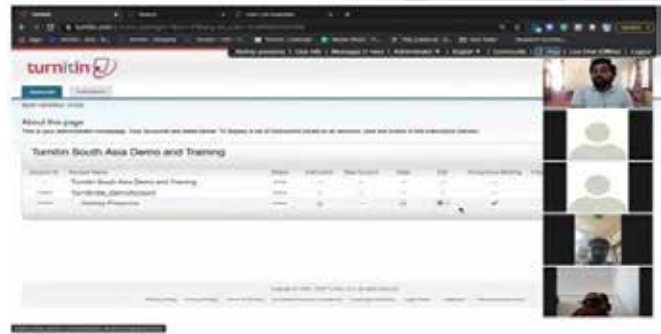
Dr Felcy D'Souza, Librarian provided Library Orientation cum demonstration on “Library Resources, Services and Facilities” to the stakeholders as below:

- Newly joined teaching faculty on 10 December 2020 & 9 March 2021.
- Freshers of MCA students of the academic year 2020-21 on 19 January 2021.
- BE Lateral Entry students of the academic year 2020-21 on 21 January 2021.
- Fresher’s of MBA ‘A’ Batch Students of the academic year 2020-21 on 23 February 2021.
- Fresher’s of MBA ‘B’ Batch Students of the academic year 2020-21 on 2 March 2021.





**One Week Online FDP on “Insights on Writing Research Proposals and Funding Opportunities”** to Research Scholars, Faculty and Students from 20 to 24 July 2020. A total of 250 students, faculty, research scholars and other staffs participated in this programme. Dr Venkateswarlu Karodi, Senior Principal Scientist, CSIR, NAL, Bengaluru was the Resource person followed by 9 other Resource Persons from eminent Institutes.



**User Awareness Programme on Turnitin- Anti Plagiarism Software to the Mangalore Region Cluster Level Colleges under VTU Consortium** was organized in association with Turnitin Publishers on 17 November 2020. Mr Akshay Prasanna, Senior Professional Educational Services Specialist, Bangalore was the Resource Person.

## READERS CLUB ACTIVITIES

Online essay writing competition on the topic “Impact of Reading in My Life” to the students of all disciplines from 10 to 12 June 2021. The number of students participating in this event is 53. The winners of the event are : Sandesh Nayak, 4th Year EE (1st Place), Sharanya M S, 3rd Year EC & Jeevan K, 1st Year CS (2nd Place) & Ovin, 3rd Year CV(3rd Place).




## WORKSHOPS / WEBINARS / CONFERENCE / FDP ATTENDED BY STAFF

**WEBINARS**  
13

**WORKSHOPS**  
2

**CONFERENCE**  
2

**FDP**  
1

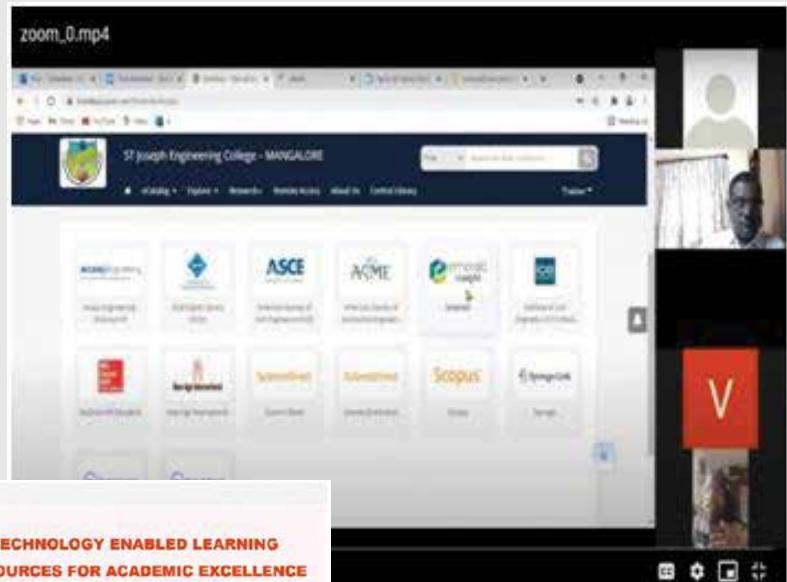
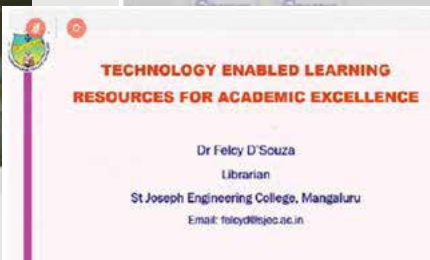
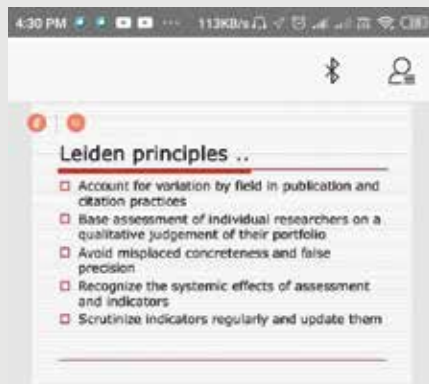
## PUBLICATIONS

Dr Felcy D'Souza, Librarian published "Research Publications Trend of St Joseph Engineering College, Mangaluru, Karnataka: A Bibliometric Study" (2021). Library Philosophy and Practice (e-journal). 4924.

The Fourth Volume of the "Compendium of Research Publications 2019" compiled & Edited by Dr Felcy D'Souza & others published by SJEC was released on 3 January 2021 during the PG inaugural programme.



## WEBINARS CONDUCTED







**SJEC**

*Extra Vaganza*

# A FOUNTAIN OF CELEBRATIONS: MILAN-2020



The Mega event of SJEC, Milan 2020 - Cultural Confluence was held on Saturday 26 September 2020. To welcome all for the event a beautiful Pookkalam was arranged at the entrance by our own staff. Milan 2020, began with the inauguration at the quadrangle at 9.00am. Keeping in mind the safety of the Josephite family, only the Management along with heads of various Departments and organizing committees were assembled in the quadrangle. A live streaming of the inaugural ceremony was telecasted at the official Instagram page of SJEC. The highlight of the event was a sensational multi-course vegetarian meal that featured over 24 dishes. The Cultural and Entertainment program showcased the extraordinary talent and spirit of our SJEC staff. We had an exciting series of performances that included singing, dancing, spot games and many more. The Best Traditional Wear award (Men and Women) was also a part of this cultural and entertainment event.

# Inaugural of LATERAL ENTRY PROGRAMME



The Inaugural Programme for the Lateral Entry students for the academic year 2020-21 was organized by the Department of Mathematics on 21 January 2021 at 2.15 PM in Fr Fred Memorial Hall. The Chief Guest of the programme, Dr Rio D'Souza, Principal welcomed the students to SJEC and explained about the facilities available on the campus. The Guest of honour Rev.

Fr Alwyn D'Souza, Assistant Director felicitated the meritorious students. In the Presidential remarks, Rev. Fr Wilfred Prakash D'Souza, Director appealed to students to develop confidence in them. Ms Salma Shabnam was the convener of the programme.

## Inauguration of FIRST YEAR BE CLASSES OF 2020-21



The inaugural ceremony of 1 year BE classes commenced in grandeur at the Kalam Auditorium of St Joseph Engineering College at 9:30 AM on 1 February 2021. Dr Ronald Sequeira, VP - HR and operations, Arvind Motors, was the Chief Guest. He expressed his joy in being amidst vibrant and young minds and advised the freshman year students to make wise choices in life. He also expressed how the choice



of college becomes a foundation for a career path and stressed on the importance of utilizing knowledge and resources to become efficient and successful professionals. Ms Sheetal Fernandes was the convener of the programme.

## Inauguration of FIRST YEAR PG CLASSES OF 2020-21

St Joseph Engineering College (SJEC), Mangaluru inaugurated its PG Courses for the year 2020-21 on 3 February 2021 at Kalam Auditorium of the college. Mr Ronald Silvan D'Souza, Executive Director of Leksa Lighting Technologies Pvt. Ltd., was the Chief Guest for the programme. He inspired the gathering by briefing on his life story and stated how difficulties in life have taught him to reach this height in career as an entrepreneur. A compendium of research publications of SJEC faculty members was released by the Chief Guest. Dr Shakila B was the convener of the programme.



# GRADUATION DAY -2020

St Joseph Engineering College celebrated its Fifteenth Graduation Day of graduands from the class of 2020 on 5 February 2021. Dr Venkata Ramana Akkaraju, Chairman, NMPT, Pamanbur, was the Chief Guest of the function. Mr Basty Vikram Shenoy, Senior Programme Manager at ITC Infotech, Bengaluru and an Alumnus of SJEC (ECE Dept.) from the batch of 2011, was the Guest of Honour on the occasion. Most Rev. Dr Peter Paul Saldanha, Bishop of Mangalore and President of SJEC, presided over the ceremony. A total of 463 Undergraduates (BE) and 104 Postgraduates (MBA, MCA, MTech, and Ph.D) received their degree certificates on the day. Dr Rohan Pinto and Ms Lavina D'Silva were the conveners of the event.

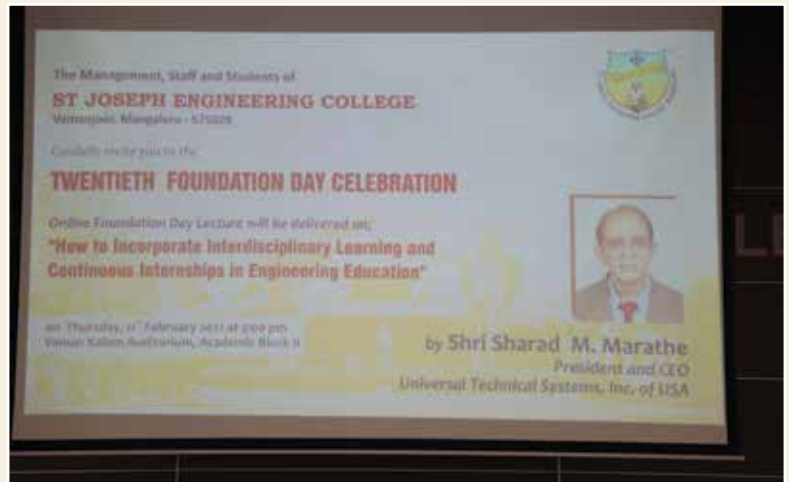


# FOUNDATION DAY 2021

St Joseph Engineering College celebrated its Twentieth Foundation Day program on Thursday, 11 February 2021 at Kalam Auditorium, SJEC. The online foundation day lecture was delivered by Shri Sharad M. Marathe, President and CEO- Universal Technical Systems, Inc. of USA. He spoke on "How to Incorporate Interdisciplinary Learning and Continuous Internships in Engineering Education" to an august gathering of SJEC management and faculty members.

Mr Sharad Marathe in his lecture highlighted on NEP in Engineering Education and opined that there should be extensive use of technology in teaching and learning. He also suggested that Teachers should have industry involvement in improving content and delivery of education.

Rev. Fr Wilfred Prakash D'Souza, Director of SJEC, Rev. Fr Rohith D'Costa and Rev. Fr Alwyn Richard D'Souza, Assistant Directors, Dr Rio D'Souza, Principal, Mr Rakesh Lobo, HR manager and Prof Lionel Aranha, member of governing council were present during the occasion. Dr Ramananda HS, Professor in the department of Mathematics moderated the lecture. Mr Govinda Krishna, Assistant Professor in the department of Civil Engineering, was the convener of the event.





# INAUGURATION OF NEW INFRASTRUCTURE FACILITIES



# IDEA LAB AT SJEC

St Joseph Engineering College (SJEC), Mangaluru, has bagged the distinction of being one of the institutions selected by the All India Council for Technical Education (AICTE) for establishing AICTE IDEA (Idea Development, Evaluation & Application) Lab. With this achievement, SJEC joins the elite list of colleges to have achieved this milestone. The 49 institutions selected to set up IDEA Labs co-funded by AICTE and industry/institution under the scheme are located in non-metro/megacities.



The IDEA Lab is aimed at encouraging students to apply Science, Technology, Engineering, and Mathematics (STEM) fundamentals towards enhanced hands-on experience, learning by doing, and product visualization. The IDEA Lab will make engineering students more imaginative and creative in addition to imbibing skills of critical thinking, problem-solving, design thinking, collaboration, communication, and lifelong learning. The lab has an area of 5000 sq. ft equipped with advanced machinery, modeling & simulation facility, tools, consumables to support the translation of an idea to prototype development or solution of a problem. SJEC has introduced a unique course titled "Skill and Entrepreneurship Development" from the 1st semester to the 6th semester. The main objective of the course is to impart necessary technical and entrepreneurial skills to the students via Problem Based Learning approach. The key contents of the course are modeling & analysis, advanced fabrication processes, design thinking, embedded electronics, use of advanced measurement instruments, social innovation, intellectual property rights, Entrepreneurship and Startup, Entrepreneurial Finance, and Startup/Business Compliances.

## AASHRAYA 2021 - GIVING IS LIVING



Amidst the continued sufferings due to COVID-19 pandemic, SJEC, in association with its Alumni Association, came together to organize Aashraya 2021 - Giving is Living, an online musical evening. The event was organized as a fundraiser for the SJEC COVID Care Center to enhance the relief work carried out by the Center towards the welfare of local communities affected by the pandemic. The event was held on 12 June 2021 from 5:30 pm. Music spreads happiness and brings people together. For the vibrant SJEC community that was under lockdown for more than a year, Aashraya 2021 brought happiness and hope. Fourteen of its best performers, from all parts of the world, came together online and delivered soulful performances that truly uplifted the spirits of their viewers. The event witnessed more than 10,000 views on YouTube. The event was also successful in generating funds beyond the expectations and became a booster to the relief activities of the SJEC Covid Care Center.

The event was hosted in Streamyard, a platform to host and stream online events, and was streamed through YouTube and Facebook. Ms Ann Varghese from the Class of 2016 and Mr Vicky Francis Vaz from the Class of 2017 were the hosts for

the event. All the fourteen performers had a screen time of 12 min and most of them came up with three numbers each. The playlist was a splendid mix of covers, original compositions, and medleys. Western, Bollywood, Tulu, Konkani, Kannada, Tamil, and Malayalam; the playlist was truly multilingual and catered to the varied tastes of music lovers. The very talented Denzil Tom, in Kerala on vacation, opened up the performances and were followed by the Beatbox King Vernon Serrao from Berlin, Germany, the melody queen Carol D'Souza logged in from Doha, followed by Rithwik from Dubai, Abhijna from Bangalore, Royston Pinto from Mangalore, the dynamite Galvin from Mangalore, the very talented Morvine from Kuwait, the fantastic Glen Noronha from Canada, the super talented, all rounder Sweethin Hartman from Mangalore, the very lovely Preemal D'Souza from Mangalore, and the show stoppers Melroy Furtado and the lovely Tanya Navas.



# ANUSPANDANA-2021

ANUSPANDANA 2021, a Techno cultural online event was organized for over 4 weeks in the months of June-July 2021 for all the students of St Joseph Engineering College, Mangaluru.

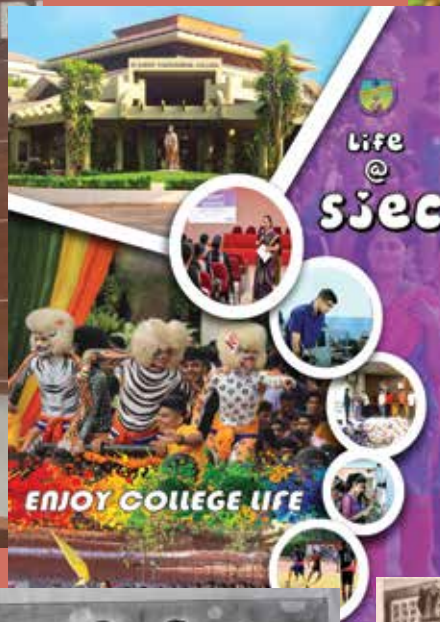
There were a total of 16 cultural events that were conducted in 2 phases. The first phase of the competition was conducted at the department level and the final 3 competitors were then selected for the final round. The final rounds of the cultural events were held from 7 July 2021 to 16 July 2021.

The valedictory program of the event was streamed on 17 July 2021 through the Streamyard platform and was telecasted live through the official YouTube Channel of SJEC. Ms Adline D'Souza compered the entire event. The recorded performances of the winners were played in addition to the announcement of winners. The hidden talents of SJEC were also honored during the event and were allowed to share their experience in their respective fields. The Principal, Dr Rio D'Souza, addressed the gathering and welcomed everyone to the event while the Presidential address was given by Rev. Fr Wilfred Prakash D'Souza, Director SJEC. The event concluded with a vote of thanks by Ms Eden Sequeira.

ANCHOR



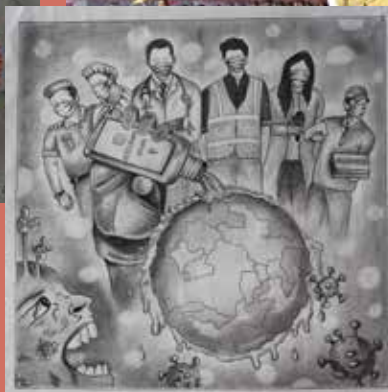
RENDER SJEC POSTER DESIGN



MEHENDI



RANGOLI



SKETCH IT



SKETCH IT



**SJEC  
RHYTHMS**

# PLACEMENT AND TRAINING GROUP

## OFFICE OF COLLABORATION



The rate of internationalization is growing rapidly, with unhindered communication channels and inexpensive travel. Universities across the world are already seeking to make the most of the possibilities by forming global partnerships and fostering relationships with other institutions.

The Collaborations Office at SJEC, is a resource centre for international collaborations. It facilitates the development of MoUs and partnerships with universities abroad and abroad consultancies. As of now it aims to promote the involvement of SJEC students in different international areas of programs.

We are glad to say that this year our seven students have completed their Virtual Exchange Program Spring Semester 2021 at Asia University, Taiwan. This shows students interest in learning new technologies.

The number of students choosing to study internationally is constantly increasing from previous years. Studying in a foreign country is definitely an experience of a lifetime and every student should get an opportunity to try it out at least once during his or her academic career. To paraphrase a popular saying, what's good for the students is good for the institution. For this reason, we are organizing various events to get all information about higher education abroad in one hub.

To provide the students an extra edge to be able to perform well in their actual IELTS Examination, the Office of Collaborations organized IELTS Mock Test on 08 March 2021 for the Final year students, who are interested to pursue their higher studies abroad. The IELTS Mock test was conducted by Dr. GuruTej, CEO, Wisdom Ed-Test Prep Academy (IELTS, TOEFL, GRE, GMAT) Advisory for International Scholarship and E-Learning Solutions.



# ONLINE LEARNING

Series # 3

**ST JOSEPH ENGINEERING COLLEGE**  
Mangalore

**OFFICE OF COLLABORATIONS**  
Organizes  
**WEBINAR**  
on

**Kick Start Your CAREER IN CANADA**

3<sup>rd</sup> and 4<sup>th</sup> year students of S-JEC

21 July 2020, 12:00 PM - 1:00 PM

**Ms Mamta D Jani**  
Country head - India  
Planet Education India  
Rich experience of 23 years in Foreign Education

**Ms Shwetha**  
Team Lead - Canada  
Planet Education India  
Experience of 8 years in Foreign Education

**HIGHLIGHTS:**

- Latest Update on Post Graduation Work Permit (PGWP)/Scholarships/Visa's in Canada
- Employment Prospects
- Co-op Program and popular courses to study in Canada
- Student Life

Book your spot : [bit.ly/SJEC-OCW-3](http://bit.ly/SJEC-OCW-3)  
+91-824-2263753 | [www.sjec.ac.in](http://www.sjec.ac.in)

Series # 4

**ST JOSEPH ENGINEERING COLLEGE**  
Mangalore

**OFFICE OF COLLABORATIONS**  
Organizes  
**WEBINAR**  
on

**Education Opportunities in AUSTRALIA**

3<sup>rd</sup> and 4<sup>th</sup> year students of S-JEC

22 July 2020, 12:00 PM - 1:00 PM

**Mrs Priya K**  
Branch and Operations head  
Planet Education Karnataka  
Rich experience of 18 years in strategic direction of higher education

**HIGHLIGHTS:**

- Impact of Covid-19 on students planning to study abroad
- Latest Update on Australian borders/Scholarships/Post Study Work Rights in Australia
- Valuing Courses in Demand after bachelor's in engineering
- Success stories of S-JEC Alumni's

Book your spot : [bit.ly/SJEC-OCW-4](http://bit.ly/SJEC-OCW-4)  
+91-824-2263753 | [www.sjec.ac.in](http://www.sjec.ac.in)

Series # 5

**BOSTON UNIVERSITY METROPOLITAN COLLEGE MET INTERNATIONAL**

**GRADUATE DEGREE PROGRAMS**

Join us to learn about S-JEC and Boston University's bachelor to master's collaboration and the opportunity to pursue a master's degree at Boston University Metropolitan College

**LEARN ABOUT:**

- Eligibility Requirements
- Application process & timeline
- Program continue & options for GFT
- Living in Boston
- Studying at Boston University

**Date:** Monday, March 23<sup>rd</sup>  
**Time:** 10:00hrs (local time)

See the S-JEC International office for more information

**Ruby Durgam**  
Executive, MET International

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Series # 6

**ST JOSEPH ENGINEERING COLLEGE MANGALURU**

**OFFICE OF COLLABORATIONS**  
Organizes

**WEBINAR on**

**Path to Success Through Affordable Education in GERMANY**

9 August 2020, 4:00 PM - 5:00 PM

OPEN TO ALL

**Mrs Niketa Dedhia**  
Principal Consultant  
Exponent Consultancy Service  
USA

**HIGHLIGHTS**

- Impact of Covid-19 on students planning to study in Europe
- Reason to pursue higher education in Germany and Europe
- Various Courses in Demand after bachelor's in engineering
- Employment Prospects

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Series # 5

**ST JOSEPH ENGINEERING COLLEGE**  
Mangalore

**OFFICE OF COLLABORATIONS**  
Organizes

**Get Familiar With Computer-delivered IELTS (International English Language Testing System)**

23 July 2020  
12:00 PM - 1:00 PM

OPEN TO ALL

**Mr Aftab Hamid**  
IELTS Operations Executive - Karnataka  
IDP Education India Pvt. Ltd. Bangalore

**HIGHLIGHTS**

- What is IELTS
- Test Format and overview
- Benefits of IELTS
- Taking IDP IELTS in India
- Q & A Session

Book your spot : [bit.ly/SJEC-OCW-5](http://bit.ly/SJEC-OCW-5)

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**OFFICE OF COLLABORATIONS**  
Organizes  
**WEBINAR** on

**STUDY ABROAD JOURNEY UK AND IRELAND**

Covid-19 updates by IDP Education

3<sup>rd</sup> and 4<sup>th</sup> year students of S-JEC

18 July 2020, 2:00 PM - 3:00 PM

**Ms Minu Rajan**  
Destination Manager - UK & Ireland  
IDP Education India  
More than 12 years of experience

**Mr Manoj Gosavi**  
Branch Manager  
IDP Mangalore Branch  
More than 12 years of experience

**HIGHLIGHTS:**

- Why study in UK & Ireland
- Career Opportunities
- Internships
- Part time jobs
- Post study work rights (PSW)
- Latest Updates

Book your spot : [bit.ly/SJEC-OCW-2](http://bit.ly/SJEC-OCW-2)  
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Series # 1

**ST JOSEPH ENGINEERING COLLEGE**  
Mangalore

**OFFICE OF COLLABORATIONS**  
Organizes  
**WEBINAR** on

**STUDY OPTIONS in USA**

(Post Covid-19 world in the Higher Education in USA)

3<sup>rd</sup> and 4<sup>th</sup> year students of S-JEC

13 July 2020, 10:30am - 11:30am

**Mr Abhinav Bajaj** MBA (USA)  
VP International Operations, Study Point, Bangalore  
& Passionate Educator/Study US Expert,  
10 years of experience in placing students to the 10 universities with partial/full funding opportunities

**HIGHLIGHTS:**

- How current situations in the US are bringing advantages to the students in Terms of Admission, Scholarships,
- How an Engineering Students can avail the benefits of Assistantships like TA, RA, GA, AA,
- Forecasting the Job Opportunities for Engineering Students in the USA.

Book your spot : [bit.ly/SJEC-OCW-1](http://bit.ly/SJEC-OCW-1)

# DISCIPLINE AND EQUITY GROUP

## COVID CELL

### RTPCR Test

- COVID 19 RTPCR test for all staff of SJEC was held on 20 and 21 November 2020, 12 and 13 February 2021.
- COVID 19 RTPCR test for Hostelites of SJEC was held on 6, 7 and 12 April 2021.

### Awareness Talk

- Dr K Jyothi – Coordinator Covid cell gave a talk on **“Awareness of COVID 19 and SOP’s to be followed”** for the First Year BE students during the Online Student Induction Program held on 16 December 2020.
- **“Awareness Talk on COVID 19 vaccination”** by Ms Sumana, Senior Lab Technologist, PHC Vamanjoor was organised jointly by COVID Cell and SJEC NSS and on 12 April 2021, for all staff and students of SJEC.
- A webinar on **“Protecting Yourself from COVID 19”** was Organized on 16 June 2021 for all staff and students of SJEC. Dr Pavan M R, Consultant Physician and Associate Professor of Medicine, Kasturba Medical College, Hospitals, Mangaluru was the resource person for the webinar.



### Vaccination Drive

COVID 19 mega free vaccination drive is conducted on 22 June 2021 for all staff, their family members, and students of SJEC



# JAGRUTI

## PREVENTION OF SEXUAL ASSAULT COMMITTEE



A Session on **“Women in Leadership- Achieving Equal Future in Covid- 19 World”** was organized on account of International Women’s Day on 08 March 2021 for the female staffs and students of SJEC by Mrs Vathika Pai, Proprietor-Nirmala Travels and Vathika International Travels, Mangalore as the resource person.



A virtual talk was organized on **“Menstrual Health and Hygiene”** on 19 March 2021 for the First-year female students of UG by **Ms Roshnie Bowmich** from Globalhunt Foundation as the resource person.

# PROFESSIONAL SOCIETIES GROUP

## SAEINDIA SJEC AND ISIEINDIA SJEC



Under this club for the academic year 2020-21, we have formed two student teams. The teams are;

- a. **Team SJEC Racing:** Design and Fabrication of engine powered All-Terrain Vehicle.
- b. **Team e SJEC Racing:** Design and fabrication of Battery-motor powered All-Terrain Vehicle.



**Team SJEC Racing** received

- 9 - All Terrain Performance Award
- 7 - Maneuverability Award
- 23 - Overall All India Rank



These two teams participated in Mahindra presents SAEINDIA BAJA 2021 event which was conducted from 21-25 April 2021 on the virtual platform. The registration started in the month of August 2020 and through a series of submissions including design report, software report, static event report and cost report, the final event was held in the month of April 2021. In the final event the designed ATV was made to run in a software called IPG Car maker which is a professional software made available for the students for some particular time.

In the event, **Team e SJEC Racing** (Design and Fabrication of Electric All-Terrain Vehicle) received

- 1 - All Terrain Performance Award
- 2 - Overall Dynamic Award
- 2 - Maneuverability Award
- 2 - Best Brake Performance Award
- 8 - Overall All India Rank

The International **Go-Kart Championship 2020** by Lovely Professional University, Punjab event which was supposed to be held in the month of April 2020 was held from 9-11 October 2020 in virtual mode and following are the achievements.

**Team Artemis Racing** received

- 1 - IGC Quiz
- 7 - Overall Rank





Under **ISIEINDIA SJEC**, **Team Raptor** designed and fabricated a solar car Raptor 2.0 for National Level ISIE Electric Solar Vehicle Championship Season 7 and couldn't participate in the event due to nationwide lockdown. Later the event was conducted virtually on 17th October 2020 and the following are the results.

- 3 - All India Rank
- 2 - Design Round
- 3 - Autonomous Round
- 3 - Business Plan

The students of these clubs undergo a rigorous training and core engineering experience. The few things which they will undergo are;

- Solid Works with simulation
- IPG Carmaker
- 3-D Printer and Laser Cutting Machine
- Communication Skills
- MATLAB and Simulink
- Fabrication, Drafting
- Business Plan
- Decision Making Ability
- Solid Work CAM for manufacturing
- Welding, Soldering and Brazing
- Presentation Skills
- ANSYS

The Department of Mechanical Engineering provides you opportunities to get involved in different activities along with academics, and it is up to you to grab the opportunities and shape your future. The department has built many skilled engineers by giving exposure to students through real world industrial challenges. The highly qualified faculties have led the students towards innovation and creativity. The department has platforms like SAEINDIA clubs, robotics clubs to provide a window for students to experience the challenges they face in industry. Through these clubs the students get the opportunity to work on the latest technologies, trends and innovation. I was a part of team SJEC racing under the SAEINDIA club of the department and had the opportunity to materialize my theoretical knowledge to build 3 different iterations of All terrain vehicles. Being in the team exposed me to the automobile industry and motorsports. I gained a lot of experience from it. Being the captain of the team, I have experienced how the industry functions form in and out. Working on CAD and CAE projects has helped me in learning different trends in technologies. The highly qualified faculty of the department guided and transformed many students into professionals ready to take on the world of mechanical engineering.



**Koushik K**  
Mech- 2021 Batch  
and Captain of TSR 5.



**Sohan P V**  
ECE - 2021 Batch  
and Captain ISIE

The team continues to strive for evolution with their hard work and perseverance which led to the creation of the next generation vehicle Raptor 2.0 which is much more efficient compared to previous generation vehicle with overall battery range of 80km per charge with a top speed of 60kmph featuring elegant design and a humble driver assistance system. The team has cleared the pre-virtual event of Electric Solar Vehicle Championship on 19th-20th October at Sri Nidhi Institute of Science and Technology, Hyderabad and achieved a rank of 6th all over India and 1st in Karnataka. And here we are, taking a step further to paint the legacy for generation of teams to come so that they also inspire to seek and aspire to build the future of transit.



# QUALITY ASSURANCE AND GOVERNANCE GROUP

## NEW FACULTY ORIENTATION

The QGG in collaboration with the HR Department organized an orientation program for new faculty on 10 December 2020 and 9 March 2021. A total of 20 new faculty participated. Mr Rolan Rodrigues, coordinated the program on both the occasions.



# RESEARCH AND FACILITIES GROUP

The Research and Facilities Group, St Joseph Engineering College organized One Week Online FDP on “**Insights on Writing Research Proposals and Funding Opportunities**” to Research Scholars, Faculty & Students of SJEC, and other Institutes from 20th to 24th July 2020 on Online platform Cisco WebEx of SJEC.

The programme was inaugurated by the Chief Guest **Dr. Venkateswarlu Karodi**, Senior Principal Scientist, CSIR – NAL, Bengaluru.

**RESEARCH & FACILITIES GROUP-SJEC**  
Organizes  
One Week Online Faculty Development Programme on  
**INSIGHTS ON WRITING RESEARCH PROPOSALS AND FUNDING OPPORTUNITIES**

**RESOURCE PERSONS**

 Senior Principal Scientist, CSIR - NAL, Bengaluru	 Assistant Professor, Dept of Electrical Engineering, IIT Indrapur	 Professor and Head, Dept of Chemistry, IITM, Bangalore	 Lecturer, SJEC	 Associate Professor (Chief Guest), Dept of Mechanical & Manufacturing Engg, BIT Mesur
 Associate Professor, Vice Chairman, GATE-IAM	 Associate Professor, Dept of Physics, SJEC	 Professor, Dept of Biosciences, Manipal University	 Professor and Head, Dept of Computer Science and Engineering, Sree College of Technology, TN, India	 Assistant professor for Auto, Dept of Mechanical & Manufacturing Engg, BIT Mesur

20<sup>th</sup> to 24<sup>th</sup> July 2020  
Registration Link: [bit.ly/SJEC-Research-OFDP-1](https://bit.ly/SJEC-Research-OFDP-1)  
For Research Supervisors, Research Scholars, Faculty Members and PG Students

**RESEARCH & FACILITIES GROUP-SJEC**  
Organizes  
One Week Online Faculty Development Programme on  
**INSIGHTS ON WRITING RESEARCH PROPOSALS AND FUNDING OPPORTUNITIES**

20<sup>th</sup> July 2020  
Online Platform

<b>Session - 10:30 AM to 12 PM</b>	<b>Session - 2 PM to 3:30 PM</b>
 Senior Principal Scientist, CSIR - NAL, Bengaluru <b>Keynote Address</b>	 Assistant Professor, Dept of Electrical Engineering, IIT Indrapur <b>Title: Writing a Research Proposal</b>
<b>Chief coordinator</b> Dr. Sandhya Das Chair Person, Research and Facilities Group, SJEC Mobile: 9845248888 Email: sandhyad@sjec.ac.in	<b>Coordinator</b> Dr. Fely D'Souza Lecturer, Mobile: 9845248888 Email: felyd@sjec.ac.in

**RESEARCH & FACILITIES GROUP-SJEC**  
Organizes  
One Week Online Faculty Development Programme on  
**INSIGHTS ON WRITING RESEARCH PROPOSALS AND FUNDING OPPORTUNITIES**

22<sup>nd</sup> July 2020  
Session 2 - 2:00 PM to 3:30 PM  
Title: Funding agencies for Independent Researchers

**Dr. Mahadevappa Manjunath**  
Associate Professor,  
School of Medical Science & Technology,  
IIT, Kharagpur  
Vice-Chairman, GATE-IAM

For Research Supervisors, Research Scholars, Faculty Members and PG Students



**SJEC**

**THINKPIECES**

# HANDWRITTEN TEXT RECOGNITION AND CONVERSION USING DEEP LEARNING TECHNIQUES :

By : Pavana, Rovina Reshma Dsouza, Sheethal R, Sweedol  
Ashica Pereira, Dr Shreenath Acharya, CSE Dept.

## Abstract :

The existing mechanisms are found to be ineffective for recognition of the handwritten text. The proposed work aims at development of an user friendly interface to recognize the handwritten text from the image documents. It involves image analysis for paragraph segmentation, text line detection and noise removal, recognition of the digits, alphabets and special symbols. Convolution Neural Network (CNN) is utilized for the computations related to the word classifications. Word segmentation is carried out using word recognition algorithms and the result is stored in the text file formats. The obtained results show that the proposed mechanism is able to achieve lesser than 10% error rates for various types of handwritten text inputs.

## Architectural Diagram :

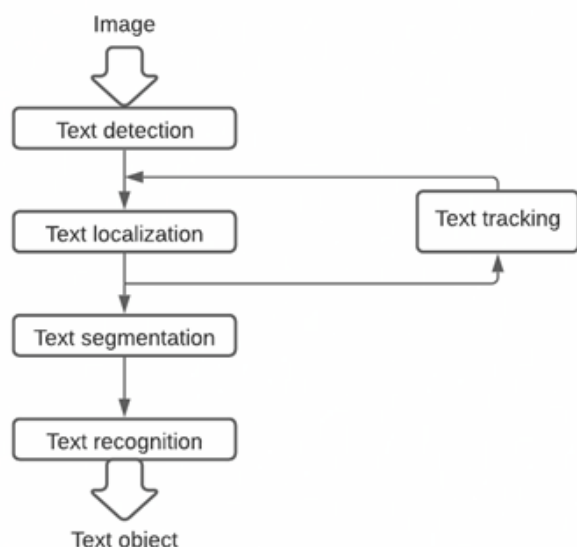


Fig. 1: Architecture Diagram

The first process after taking the image as input is finding out the exact position of the image from where the handwritten text begins. Text Localization identifies bounding boxes for text paragraph. This process continues, when paragraphs are found on checking for further paragraphs by the Text Tracking process.

Text Segmentation process detects bounding boxes for the words in the detected paragraphs which were segmented earlier. The handwritten text is line-wise processed for the purpose of conversion. The final text that is generated is stored in a text file, and is also displayed to the user via the graphical user interface.

## Objectives :

The aim of this project was to review the existing methods for handwritten text word recognition and implement one of them for a user friendly application which can recognize handwritten text from image documents.

- Perform image analysis for text line detection, text line extraction, recognition of digits, alphabets, and special symbols.
- Implement word segmentation and recognition using word recognition algorithms, template matching and structural analysis algorithms.
- Recognize the handwritten text and store it in text document format.

## Obtained Outcomes :

- A simple user friendly application which can convert handwritten text present in image into digital text.
- Currently this model takes all the paragraphs together as one, for the purpose of segmentation and recognition.
- The average Character Error Rate was 8%, which was based on the accuracy of the model results.

## Advantages :

- Physical documents and notes consisting of handwritten text are difficult to store and also to access in an efficient manner. It is also difficult to share such files with others. So, conversion of handwritten text to digital text is of great help.

- It is difficult to preserve handwritten notes because the ink often gets faded as time passes. A better way to get rid of these problems, is to digitize these notes with the computer font so that it will be readable always.
- Instead of manually re-typing the text, automated handwriting recognition can drastically cut down on the time required to transcribe large volumes of text.

#### Applications :

- **Postal Office Automation:** Recognition and conversion of the postal address can be automated using text conversion system, so that grouping of the posts can be carried out.
- **Bank Automation:** Easy recognition of the text written on forms, cheques, demand drafts can be done using automated text conversion system.

## UNITS OF COMPUTER MEMORY MEASUREMENT

1 Bit = Binary Digit

8 Bits = 1 Byte

1024 Bytes = 1 KB (Kilo Byte)

1024 KB = 1 MB (Mega Byte)

1024 MB = 1 GB (Giga Byte)

1024 GB = 1 TB (Terra Byte)

1024 TB = 1 PB (Peta Byte)

1024 PB = 1 EB (Exa Byte)

1024 EB = 1 ZB (Zetta Byte)

1024 ZB = 1 YB (Yotta Byte)

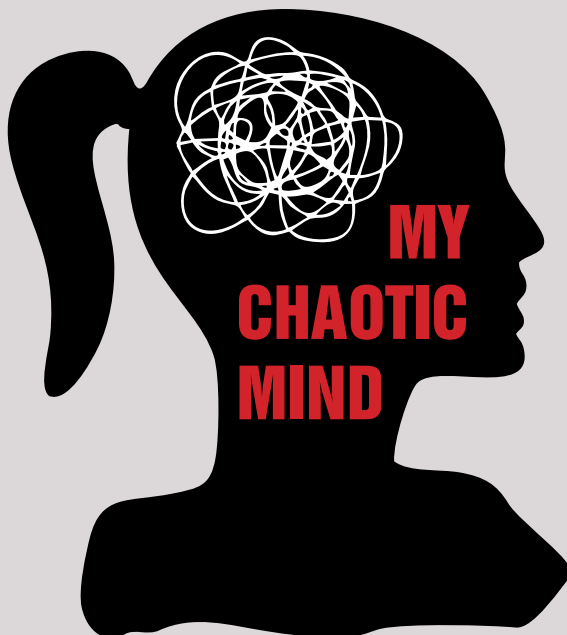
1024 YB = 1 TB (Bronto Byte)

1024 Brontobyte = 1 (Geop Byte)

Geop Byte is the Highest Memory



- By Ankitha Rai,  
VII CS A Section



*My little world of chaos,  
Memories and miseries·  
Eruption of emotions  
And unsolved mysteries·  
With fountains of tears  
And my scars as roads,  
A headache for thunder  
Due to sorrowful storms·  
Every second is a thought·  
Some deep, some insane·  
Every moment goes by  
Like a dead man's game·  
It rains in seasons  
On thorns like trees·  
But somewhere in here  
There are flowers beneath·  
Flowers of fragrance  
By few teardrops as rain·  
Hope as sunshine,  
That outgrows all pain·  
It's a world of understanding,  
Of yearning and fear  
My little world of chaos  
A cosmos, so dear·*



- Aleema PK, IV A CSE

# CONFINED, BUT NOT OVERPOWERED

*This is our new normal, they say  
Wearing masks, at home we stay.  
It all began with unexpected holidays  
Many went home, back to their old ways.*

*However, I remained at the hostel  
Eating vegetables, and reading gospel.  
Days went by, months went by....  
And since then, on my bed I lie.*

*Oh classes? Yes, they were online.  
Exams? Shush... we are in quarantine.  
These times, indeed looked astounding,  
Little did we realize, there were people dying.*

*Many loved ones left without bidding farewell,  
And many felt quite unwell.  
People unexpectedly lost their jobs,  
Mental health, indeed wrapped in sobs.*

*Everything had to shut down,  
Our picnic plans had to drown.  
Teachers had to work harder,  
And motivate students to maintain order.*

*And then came the online internals,  
Which is now a memory of infinite hurdles.  
Everybody's sleep pattern changed.  
Some felt quite lost and estranged.*

*Strict covid protocols had to be followed,  
Because this future was indeed borrowed.  
Yes, we are in this together,  
We are yet to find the ultimate treasure!*

*Frontline workers still have to juggle with their lives,  
to see the world, go back to those ordinary times.  
For now, the best we can do is stay at home and pray.  
Not the "go corona go" that most of you say.*

*As our efforts slowly combine,  
things will get better with time.  
The only treasure at the end  
Is your life, my dear friend!*



**- Alvina Vanessa Mendonca**  
2nd year Civil



# ಎಲೆ ಜಿಗುರಿನೊಂದು ಆಸರೆ ನಿಕ್ಕಾರ

“ಶ್ಲೋಕ್ ಏನ್ ಆಲೋಚನೆ ಮಾಡ್ತಿದ್ವಿಯಾ ನಿಂತೋ.. ಹ್.. ” ಎಂದು ಕಣ್ಣು ದೊಡ್ಡದಾಗಿ ಗದರಿಸಿದರು ಒಂದನೇ ತರಗತಿಯ ಶಿಕ್ಷಕಿ ವಂಧ್ಯಾ..

“ ಹೇಳು 2+2 ಎಷ್ಟು ??” ಎಂದು ಪ್ರಶ್ನಿಸಿದರು.. ಆದರೆ ಆಗಲೇ ಹೆದರಿದ್ದ ಶ್ಲೋಕ್ ಗಡಗಡನೆ ನಡುಗುತ್ತಾ “ 10 ” ಎಂದಿದ್ದ. ಅವನ ಉತ್ತರ ಕೇಳಿದ ವಂಧ್ಯಾಳ ಕೋಪ ನೆತ್ತಿಗೇರಿತು..

“ ನಿನ್ನದು ಯಾವಾಗ್ಲೂ ಇದೆ ಆಯ್ತು ಒಂದು ಸಿಲ್ಲಿ ಕ್ಷಿಪ್ಪನಿಗೆ ಆನ್ಸರ್ ಮಾಡೋಕೆ ಬರಲ್ಲಾ 2+2 ಅಂದ್ರೆ ಎಷ್ಟು ಅಂತ ಇನ್ನು ಶಾಲೆಯ ಮುಖ ನೋಡದ ಮಕ್ಕಳಿಗೂ ಗೊತ್ತಿರುತ್ತೆ ಆದರೆ ನೀನು.. ಶೇಮ್ ಆನ್ ಯು , ಯಾವಾಗ ನೋಡಿದ್ದು ನಿನ್ನದೆ ಲೋಕದಲ್ಲಿ ಇರ್ತಿಯಾ .ಸೊ ಈಗ ನೀನು ನನ್ನ ಕ್ಲಾಸಲ್ಲಿರೋದು ಬೇಡ ಆಚೆ ನಡಿ ನಾಳೆ ಬರೋವಾಗ ಪೇರೆಂಟ್ಸ್ ನಾ ಕರ್ಕೊಂಡು ಬಾ..”

“ಮ್ಯಾಂ..” ಎಂದ ಶ್ಲೋಕ್ ಅಳಲಾರಂಭಿಸಿದ..

“ ಇದೊಂದು ಚಂದ ಕಲ್ಪಿದ್ವಿಯಾ..ಅಲಾ..ಇದಕ್ಕೆಲ್ಲಾ ನಾನು ಬಗ್ಗಲ್ಲಾ.. ಹೋಗಿ ಕ್ಲಾಸ್ ಆಚೆ ನಿಂತೋ.. ” ಎಂದರು ಸುಮ್ಮನೆ ತಲೆ ಬಗ್ಗಿಸಿ ಬಿಕ್ಕುತ್ತಿದ್ದವನ ಕಂಡು “ಐ ಸೆಡ್ ಗೆಟ್ ಔಟ್ ಪ್ರಮ್ ಮೈ ಕ್ಲಾಸ್” ಎಂದು ಚೀರಿದಳು..

ಈಗ ಪೂರ್ಣ ಹೆದರಿದವನು ನಡುಗುತ್ತಲೇ ಹೊರನಡೆದರೆ ಅವನ ಚರ್ಯೆ ಕಂಡ ಕ್ಲಾಸಿನ ಕೆಲವು ಮಕ್ಕಳು ಬೇಸರ ವ್ಯಕ್ತಪಡಿಸಿದರೆ ಉಳಿದವು ನಕ್ಕವು!

ಶ್ಲೋಕ್ ಶ್ರೀಮಂತ ಕುಟುಂಬದ ಪುಟಾಣಿ.. ತಂದೆ ತಾಯಿಯಿಬ್ಬರೂ ವೈದ್ಯರು.. ಅವರ ಕುಟುಂಬ ಸಮಾಜದ ಒಳಿತಿಗಾಗಿ ದುಡಿಯುವವರು , ಆದರೆ ಸಮಾಜಕ್ಕೆ ಒಳಿತು ಮಾಡುವ ಭರದಲ್ಲಿ ಮುಗ್ಧಕಂದನ ಕಡೆಗೆ ಯಾರ ಗಮನವೂ ಇರಲಿಲ್ಲಾ.. ಅವರ ಪ್ರಕಾರ ಪಟ್ಟಣದ ಪ್ರತಿಷ್ಠಿತ ಶಾಲೆಗೆ ಮಗ ಹೋಗುತ್ತಿದ್ದಾನೆ ಚೆಂದ ಕಲಿಯುತ್ತಾನೆ ಅಷ್ಟೇ..

ತರಗತಿಯ ಹೊರಗೆ ಬಂದ ಶ್ಲೋಕ್ ಬಿಕ್ಕುಪಿಕೆ ಮುಂದುವರೆದಿತ್ತು.. ಇಂಟರ್ವಲ್ ಸಮಯದಲ್ಲಿ ಕಾರಿಡಾರಲ್ಲಿ ಓಡಾಡುತ್ತಿದ್ದ ಮಕ್ಕಳು, ಶಿಕ್ಷಕರಲ್ಲಾ ಗೊಣ್ಣೆ ಸುರಿಸುತ್ತಿದ್ದ ಪುಟಾಣಿಯನ್ನು ಕಂಡು ನಕ್ಕು, ದಡ್ಡ ಶಿಕಾಮಣಿಗೆ ಆಗಬೇಕಾದದ್ದೆ ಎಂದುಕೊಂಡರೆ ಹೊರತು ಅವನನ್ನಾರು

ಸಮಾಧಾನಿಸಲಿಲ್ಲಾ.. ಕೆಲ ಶಿಕ್ಷಕರು ವಂಧ್ಯಾಳಲ್ಲಿ ಹುಡುಗನ ಬಗ್ಗೆ ವಿಚಾರಿಸಿ ಒಳ್ಳೆದು ಪೇರೆಂಟ್ಸ್ ಜೊತೆ ಮಾತಾಡಿ ಎಂದು ನಡೆದರಷ್ಟೆ..



**Shreya J Shetty**  
4th Sem ECE

ಶಾಲೆ ಮುಗಿದು ಶ್ಲೋಕ್ ತಾನು ದಿನನಿತ್ಯ ಪ್ರಯಾಣಿಸುವ ಶಾಲಾ ಬಸ್ ಏರಿದ..

ಅವನ ಕಂಡ ಮಕ್ಕಳು “ ಶ್ಲೋಕ್ 2+2 ಹೌವ್ ಮಚ್?? , 10 ಮ್ಯಾಂ ” ಎಂದು ಜೋರಾಗಿ ನಗಲಾರಂಭಿಸಿದವು.. ಮೊದಲೆ ಅವಮಾನಕ್ಕೊಳಗಾಗಿದ್ದ ಶ್ಲೋಕ್ ತಲೆಯೆತ್ತಲೆ ಇಲ್ಲಾ.. ಅದು ಅಲ್ಲದೆ ಅವನ ತಲೆಯಲ್ಲಿ ತಂದೆ ತಾಯಿಯನ್ನು ಎದುರಿಸುವುದು ಹೇಗೆಂಬ ಭಯ. ಯಾಕೆಂದರೆ ವೈದ್ಯರಾದ ತಂದೆ ತಾಯಿಯರಿಗೆ ತಮ್ಮ ಮಗ ಯಾವಾಗಲೂ ನೂರರಲ್ಲಿ ನೂರು ತೆಗೆಯಲೆ ಬೇಕೆಂಬ ಆಸೆ.... ಎಲ್ಲಾದರೂ ಶ್ಲೋಕ್ ಮಾರ್ಕ್ ತೆಗೆಯಲಿಲ್ಲವೆಂದರೆ ಆರು ವರ್ಷದ ಮುದ್ದು ಕಂದ ಎಂದು ನೋಡದೆ ಮನಸ್ಸಿಗೆ ಬಂದಹಾಗೆ ಹೊಡೆದು ಹೆದರಿಸುತ್ತಿದ್ದರು.. ಹೀಗಿರುವಾಗ ಶಾಲೆಗೆ ಬರಲು ಹೇಳಿರುವರೆಂದರೆ ಅವನ ತಂದೆ ತಾಯಿ ಬಿಡುವರೆ.. ಉಹೂಂ ಖಂಡಿತ ಇಲ್ಲಾ ಊರಿನಲ್ಲಿ ಒಳ್ಳೆಯ ಮರ್ಯಾದೆ ಕಾಪಾಡಿಕೊಂಡಿದ್ದೇವು ಎಲ್ಲಾ ಹಾಳುಗೆಡವಿಬಿಟ್ಟೆ ಎಂದು ಚೆನ್ನಾಗಿ ಹೊಡೆಯುತ್ತಾಷ್ಟೆ. ತನ್ನ ತಂದೆ ತಾಯಿಯರು ಹೇಗೆ

ವರ್ತಿಸಬಹುದು ಎಂದು ನೆನೆದ ಶ್ಲೋಕ್ ನಡುಗುತ್ತಿದ್ದ.. ಅಷ್ಟರಲ್ಲೇ ಅವನ ಮನೆಯ ಸ್ಟಾಪ್ ಬಂದಿತ್ತು.. ಅವನ ತಲೆಯೆಲ್ಲೊಂದು ಯೋಚನೆಯೋ!!

ಶ್ಲೋಕ್ ಮನೆಯ ಗೇಟ್ ಮುಂದೆ ಬಸ್ ನಿಲ್ಲುತ್ತಿದ್ದಂತೆ ಇಳಿದವ ಗೇಟ್ ದಾಟಿ ಮನೆಯೊಳಗೆ ಹೋಗುವುದನ್ನು ಬಿಟ್ಟು ಮನೆಯ ಹಿಂದೆ ನಡೆದಿದ್ದ!! ಯಾಕೆಂದರೆ ಮನೆಯ ಹಿಂದೆ ಅವರದೆ ಈಜುಕೊಳವಿತ್ತು.. ತನ್ನ ತಂದೆ ತಾಯಿಯರ ಬೈಗುಳ ಹೊಡೆತಕ್ಕಿಂತ ಸಾಯುವುದೆ ಒಳಿತೆಂದು ಭಾವಿಸಿತು ಮುಗ್ಧಮನಸ್ಸು.. ತಾನು ಕಂಡಿದ್ದ ಯಾವುದೂ ಕಾರ್ತುನಲ್ಲಿ ನೀರಿನಲ್ಲಿ ಮುಳುಗುವುದನ್ನು ತೋರಿಸಿದಾಗ ಅರ್ಥವಾಗದೆ ತನ್ನ ಅಜ್ಜಿಯಲ್ಲಿ ಕೇಳಿದಾಗ.. “ ನೀರಿನಲ್ಲಿ ಈಜು ಬಾರದವರು ಮುಳುಗುತ್ತಾರೆ ಕಂದ ” ಎಂದಿದ್ದರು..

ಅದು ಇಂದು ಅವನಿಗೆ ನೆನಪಾಗಿತ್ತು..

ಈಜು ಕೊಳದ ಮುಂದೆ ನಿಂತು ತನ್ನ ಬ್ಯಾಗ್ ಕೆಳಗಿಳಿಸಿದವನು “ ಮಮ್ಮಾ, ಡ್ಯಾಡು ಮಿಸ್ ಯು ಬೊತ್ ನೀವು ನನಗೆ ಒಳ್ಳೆ ಪೇರೆಂಟ್ಸ್.. ಆದ್ರೆ ನಾನು ನೀವು ಹೇಳಿದಂತೆ ಸ್ಕೂರ್ ಮಾಡ್ತಿಲ್ಲಾ ಸೊ ಐ ಆಮ್ ನಾಟ್ ಗುಡ್ “ ಎಂದು ಅಳುತ್ತಲೇ ನೀರಿಗೆ ಧುಮುಕಿದ್ದ..

ಅಲ್ಲೆ ಗಾರ್ಡನ್‌ನಲ್ಲಿ ಕೆಲಸ ಮಾಡುತ್ತಿದ್ದ ವ್ಯಕ್ತಿ ನೀರು ಕುಡಿಯಲು ಒಳ ಹೋಗಿ ಆಗತಾನೆ ಹೊರಬಂದಿದ್ದ.. ಆತನಿಗೆ ಏನೂ ನೀರಿಗೆ ಬಿದ್ದ ಶಬ್ದ ಕೇಳಿತ್ತು.. ಸಂಜೆಯ ಸಮಯದಲ್ಲಿ ಯಾರು ಅತ್ತಕಡೆ ಹೋಗದ ಕಾರಣ ಯಾರೆಂದು ತಿಳಿಯಲು ಅತ್ತ ಓಡಿದ ಅಲ್ಲಿ ಶ್ಲೋಕ್ ನನ್ನು ಕಂಡು ಬೆಚ್ಚಿದವನು ಕೂಡಲೇ ನೀರಿಗೆಳಿದು ಅವನನ್ನು ರಕ್ಷಿಸಿದ್ದ..

ಆದರೆ ಆಗಲೇ ನೀರು ಕುಡಿದಿದ್ದ ಶ್ಲೋಕ್ ಸ್ಮೃತಿ ತಪ್ಪಿದ್ದ.. ಅವನ ಹೊಟ್ಟೆ ಅದುಮಿ ನೀರು ಹೊರ ತೆಗೆದನಾದರು.. ಉಸಿರಾಟ ಕ್ಷಣಕ್ಷಣಕ್ಕೂ ಕ್ಷೀಣಿಸುತ್ತಿದ್ದದ್ದನ್ನು ಕಂಡು ಇತರ ಕೆಲಸಗಾರರನ್ನು ಕರೆದ.. ಮನೆ ಮಂದಿ ಯಾರಿರದ ಕಾರಣ ಕೆಲಸದವಳೊಬ್ಬಳು ಅವರಿಗೆ ವಿಚಾರ ತಿಳಿಸಿ ತಾವೆ ಡ್ರೈವರ್ ಸಹಾಯದಿಂದ ಅವನನ್ನು ಆಸ್ಪತ್ರೆಗೆ ಸಾಗಿಸಿದರು..

ಆಸ್ಪತ್ರೆ ತಲುಪಿದವರ ಮೇಲೆ ಶ್ಲೋಕ್ ತಂದೆ ತಾಯಿ ಎಗರಾಡಿದರು.. ಆದರೆ ಮಗನ ಪರಿಸ್ಥಿತಿ ಹೆಚ್ಚು ಮಾತಾಡದಂತೆ ಮಾಡಿತು.. ಅವರದೆ ಆಸ್ಪತ್ರೆಯಾದ ಕಾರಣ ಮಗುವನ್ನು ಆಸ್ಪತ್ರೆಗೆ ಸೇರಿಸಿಕೊಂಡು ವಿಶೇಷ ಕಾಳಜಿಯೊಂದಿಗೆ ಟ್ರೀಟ್ಮೆಂಟ್ ಆರಂಭಿಸಿದರು.. ಅದಕ್ಕೆ ಶ್ಲೋಕ್ ಸ್ವಂದಿಸಿದ ಕೂಡ.. ಸ್ವಲ್ಪ ಸಮಯದಲ್ಲೆ ಚೇತರಿಸಿಕೊಂಡು ಎಚ್ಚರಗೊಂಡ ಮಗನ ಬಳಿ ತೆರಳಿದವರು ಹೆಚ್ಚೇನು ಮಾತನಾಡದೆ ಮನೆಗೆ ಕರೆದೊಯ್ದಿದ್ದರು.. ಆದರೆ ಮನೆಗೆ ಬಂದ ಶ್ಲೋಕ್ ಮಹಾಮೌನಿಯಾಗಿದ್ದ.. ಯಾರೊಂದಿಗೂ ಬೆರೆಯುತ್ತಿರಲಿಲ್ಲ.. ಕೆಲವೊಮ್ಮೆ ಅಳುತ್ತಿದ್ದ.. ಇನ್ನು ಕೆಲವೊಮ್ಮೆ ನಿರ್ಭಾವುಕನಾಗಿರುತ್ತಿದ್ದ. ಕೆಲಸದಾಕೆ ಬಂದು ಊಟ ಮಾಡಿಸಿದರೆ ಊಟ ಇಲ್ಲವೆಂದರೆ ಅದು ಕೂಡ ಬೇಡವೆಂಬಂತೆ ಇರುತ್ತಿದ್ದ..

ಸ್ಲಿಮ್ಮಿಂಗ್ ಪೂಲಿಗೆ ಕಾಲು ಜಾರಿ ಬಿದ್ದಿರುವನೆಂದು ಭಾವಿಸಿದ ಅವನ ತಂದೆ ತಾಯಿ ಮೊದ ಮೊದಲು ಅವನ ವರ್ತನೆಯನ್ನು ನಿರ್ಲಕ್ಷಿಸಿದರಾದರು ಅದೇ ಮುಂದುವರೆದಾಗ ಹೆದರಲಾರಂಭಿಸಿದರು.. ಶಾಲೆಗೆ ಹೋದರೆ ಸರಿ ಹೋಗುವನೆಂದು ಭಾವಿಸಿ ಅವನನ್ನು ಶಾಲೆಗೆ ಕಳುಹಿಸುವ ಯೋಚನೆ ಮಾಡಿದರಾದರು ಅವನ ಪರಿಸ್ಥಿತಿಯನ್ನು ಕಂಡು ಕಳುಹಿಸಲು ಅವರ ಮನಸ್ಸೊಪ್ಪಲಿಲ್ಲ.. ಹಾಗೆಂದು ಅವನ ತಂದೆ ತಾಯಿಯೇನು ಅವನಿಗೆ ಸಮಯ ನೀಡುತ್ತಿರಲಿಲ್ಲ.. ಅವರು ಕೆಲಸಕ್ಕೆ ಹೋಗುವ ಸಮಯಕ್ಕೆ ಹೋಗುತ್ತಿದ್ದರು ಅವನ ಕಾಳಜಿ ಮಾಡುತ್ತಿದ್ದದ್ದು ಮನೆಕೆಲಸದಾಕೆ ಆದರೆ ಶ್ಲೋಕನಿಗೆ ಅವಶ್ಯಕತೆ ಇದ್ದದ್ದು ಅವನಿಗೆ ಉಸಿರು ನೀಡಿದಾಕೆ!!

ಹೀಗೆ ದಿನಗಳು ಸಾಗಿತ್ತು.. ಒಂದು ವಾರದವರೆಗೂ ಅವನ ವರ್ತನೆಗಳನ್ನು ಗಮನಿಸಿದ್ದ ಶ್ಲೋಕನ ಅಮ್ಮನಿಗೆ ಮಗನ ಆರೋಗ್ಯಕ್ಕಿಂತ ಆತ ಶಾಲೆಗೆ ಹೋಗುತ್ತಿಲ್ಲವಲ್ಲಾ ಎಂಬ ಸಂಕಟವೆ ಹೆಚ್ಚಾಗಿತ್ತು!!.. ಇದನ್ನು ಆಕೆ ತನ್ನ ಕೊಲಿಗ್ ಒಬ್ಬರಲ್ಲಿ ತೋಡಿಕೊಂಡಾಗ ಅವರು ಹೆದರಿರುವ ಮಗನನ್ನು ಕರೆದುಕೊಂಡು ಸೈಕಲಾಜಿಸ್ಟನ್ನು ಕನ್ಸಲ್ಟ್ ಮಾಡು.. ಎಂದಿದ್ದರು.. ಅದು ಆಕೆಗು ಸರಿಯೆನಿಸಿ ಪತಿಯ

ಬಳಿ ವಿಷಯ ತಿಳಿಸಿದಾಗ ಆತನಿಗೆ ಅದು ಸರಿ ಎನಿಸಲಿಲ್ಲ.. “ ನನ್ನ ಮಗನೇನು ಹುಚ್ಚನಾ ?? “ ಎಂದುಕೊಂಡರಾದರು ಅವರ ವೈದ್ಯ ವೃತ್ತಿ “ ಕೌನ್ಸೆಲಿಂಗ್ ಹೋಗುವವರೆಲ್ಲಾ ಹುಚ್ಚರಾ ?? “ ಎಂದು ಗದರಿದಂತೆನಿಸಿತು , ಅದಲ್ಲದೆ ಮಗ ಶಾಲೆಗೆ ಹೋಗುವಂತಾದರೆ ಸಾಕು ಎಂದುಕೊಂಡು ಒಪ್ಪಿದರು..

ಮರುದಿನವೇ ಶ್ಲೋಕ್‌ನ್ನು ಅವರಿಗೆ ಪರಿಚಿತವಿರುವ ಫೇಮಸ್ ಸೈಕಲಾಜಿಸ್ಟ್ ಒಬ್ಬರ ಬಳಿ ಕರೆದೊಯ್ದರು.. ಮೊದಲೆ ಹೆದರಿದ್ದ ಹುಡುಗ ಅಪರಿಚಿತ ವ್ಯಕ್ತಿಯನ್ನು ಕಂಡು ನಡುಗಲಾರಂಭಿಸಿದ. ಅವನ ತಾಯಿ ಕಣ್ಣಲ್ಲೆ ಅವನಿಗೆ ಗದರಿಸಿ ಅವರ ಮುಂದೆ ಕುರಿಸಿ ಹೊರನಡೆದರು.. ಅವರು ಕೇಳಿದ ಪ್ರಶ್ನೆಗಳೆಲ್ಲಾ ಹೆದರುತ್ತಲೆ ಉತ್ತರಿಸಿದವನನ್ನು ಹೊರಗೆ ಕಳುಹಿಸಿ ಅವನ ತಂದೆ ತಾಯಿಯರನ್ನು ಒಳಕರೆದರು..

“ ಮಗನ ಜೊತೆ ಪ್ರತಿದಿನ ಎಷ್ಟು ಟೈಮ್ ಸ್ಟೆಂಡ್ ಮಾಡ್ತಿರಾ ?? ” ನೇರವಾಗಿತ್ತವರ ಪ್ರಶ್ನೆ..

“ ಟೈಮ್ ಸ್ಟೆಂಡ್ ?? ” ಎಂದು ದಂಪತಿಗಳು ಒಬ್ಬರನ್ನೊಬ್ಬರು ನೋಡುತ್ತಾ.. “ ನಿಮ್ಮೆ ಗೊತ್ತು ನಾವಿಬ್ಬು ಕೂಡ ಡಾಕ್ಟರ್ಸ್ ನಮ್ಮ ಬ್ಯುಸಿ ಟೈಮ್‌ನಲ್ಲಿ ಅವನಿಗೆ ಹೇಗೆ ತಾನೇ ಟೈಮ್ ಕೊಡೋಕೆ ಸಾಧ್ಯ!!? ಹಾಗಂತ ಅವನಿಗೇನು ಕಮ್ಮಿ ಮಾಡಿಲ್ಲಾ ಅಮ್ಮನಂತೆ ನೋಡ್ಕೊಳೊಕೆ ಕೆಲಸದಾಕೆ ಇದ್ದಾಳೆ ಏನಾದ್ರು ಬೇಕು ಅಂತ ಕೇಳೊಕೆ ಮುಂಚೆನೆ ಅವನ ಎದುರು ತಂದಿಡಿವಿ ಇನ್ನು ಸಿಟಿಯ ಟಾಪ್ ಸ್ಕೂಲಲ್ಲಿ ಓದ್ತಿದಾನೆ ಇನ್ನು ಏನು ಬೇಕು ಅವನಿಗೆ?? ಇನ್ನು ಕಾಳಜಿ ತೋರಿಸೋದು ಬೇಕಂದ್ರೆ ಆಯಾನ ಅಪಾಯಿಂಟ್ ಮಾಡ್ತಿವಿ ” ಎಂದು ಬೇಜವಾಬ್ದಾರಿತನದಲ್ಲಿ ನುಡಿದಿದ್ದರು ಶ್ಲೋಕ್ ತಂದೆ.

“ ಇಲ್ಲೆ ನೀವು ತಪ್ಪೊದು.. ಆ ಮಗುಗೆ ಈಗ ಆರು ವರ್ಷ ಅವನಿಗೆ ಈ ಸಮಯದಲ್ಲಿ ಎಲ್ಲದಕ್ಕಿಂತ ಹೆಚ್ಚಾಗಿ ಬೇಕಾಗಿರೋದು ತಂದೆ ತಾಯಿಯ ಪ್ರೀತಿಯ ಹೊರತು ಆಯಾ ಅಥವಾ ಕೆಲಸದವರದ್ದಲ್ಲ.. ನೀವು ಡಾಕ್ಟರ್ಸ್ ಒಪ್ಪಿನಿ ಆದ್ರೆ ಇಬ್ಬೂ ನಿಮ್ಮ ಶೆಡ್ಯೂಲಲ್ಲಿ ಇಂತಿಷ್ಟು ಸಮಯ ನಿಮ್ಮ ಕಂದನಿಗೆ ಕೊಡಬಹುದಲ್ಲ.. ಆ ಸಮಯದಲ್ಲಿ ಅವನ ಸ್ಕೂಲ್ ಬಗ್ಗೆ ಅವನ ಇಷ್ಟ ಕಷ್ಟ ಕೇಳೊದ್ದಲ್ಲ.. ನೀವು ಹೀಗೆ ಮಾಡಿದ್ರೆ ಅವನ ಮನದಲ್ಲಿ ಎಂತಹ ಸಮಯದಲ್ಲೂ ನನ್ನ ಅಪ್ಪ, ಅಮ್ಮಾ ನನ್ ಜೊತೆ ಇರ್ತಾರೆ ಅನ್ನೊ ಭಾವನೆ ಮೂಡುತ್ತೆ ಆಗ ಮೊನ್ನೆ ತರ ಅವನು ಸಾಯೊಕೆ ನೀರಿಗೆ ಹಾರಲ್ಲಾ!! ” ಎಂದಿದ್ದರು..

“ ಏನು?? ಅವನೆ ನೀರಿಗೆ ಹಾರಿದ್ದ ?? ” ಎಂದು ಪ್ರಶ್ನಿಸಿದ್ದ ಶ್ಲೋಕ್ ತಾಯಿ ಧ್ವನಿಯಲ್ಲಿ ಗಾಬರಿಯಿತ್ತು.. ಎಷ್ಟಾದರೂ ಅವನನ್ನು ಒಂಬತ್ತು ತಿಂಗಳು ಹೊತ್ತು ಜನ್ಮ ನೀಡಿದವಳಲ್ಲವೆ..

ಹೌದು ಎಂಬಂತೆ ತಲೆಯಾಡಿಸಿದವರು “ ಶಾಲೆಯಲ್ಲಿ ಮೇಡಮ್ ಪ್ರಶ್ನೆಗೆ ಉತ್ತರ ಕೊಟ್ಟಿಲ್ಲಾ ಅಂತ ನಿಮ್ಮನ್ನ ಕರ್ಕೊಂಡು ಬರೋಕೆ ಹೇಳಿದ್ವಾರೆ ಆದರೆ ನೀವು ವಿಷಯ ತಿಳಿದರೆ ಅವನಿಗೆ ಗದರುತ್ತಿರಾ ಅನ್ನೊ ಭಯಕ್ಕೆ ಹೀಗೆ ಮಾಡ್ಕೊಂಡಿದ್ದಾನೆ ಈಗ ಅವನ ಮನಸ್ಸು ಇನ್ನಷ್ಟು ಸೂಕ್ಷ್ಮವಾಗಿದೆ ಅವನನ್ನ ಎಷ್ಟು ಕಾಳಜಿಯಿಂದ ನೋಡಿಕೊಳ್ಳುತ್ತಿರೊ ಅಷ್ಟು ಒಳ್ಳೆಯದು.. ಇಲ್ಲಾ ಎಂದರೆ ನೀವು ನಿಮ್ಮ ಮಗುವನ್ನ ಕಳೆದುಕೊಳ್ಳೆ ಬೇಕಾಬಹುದು!! ” ಎಂದು ಪರಿಸ್ಥಿತಿಗೆ ಅನುಗುಣವಾಗಿ ಕೊಂಚ ಕಟುವಾಗಿಯೆ ನುಡಿದಿದ್ದರು.. ಅವರ ಮಾತು ಆಲಿಸಿದವರಿಗೆ ತಮ್ಮ ತಪ್ಪಿನ ಅರಿವಾಗಿತ್ತು.. ಹಣದ

ಹಿಂದೆ ಓಡುವ ಭರದಲ್ಲಿ ತಮ್ಮದೇ ಕಂದನಿಗೆ ತಾವು ಸಮಯ ನೀಡುತ್ತಿಲ್ಲಾ ಎನ್ನುವುದು ಅವರ ಅರಿವಿಗೆ ಬಂದಿತ್ತು..

ಡಾಕ್ಟರ್ ಜೊತೆ ಮಾತು ಮುಗಿಸಿ ಕ್ಯಾಬಿನ್ ಹೊರಗೆ ಬಂದವರು ಶೂನ್ಯದತ್ತ ದೃಷ್ಟಿ ನೆಟ್ಟಿದ್ದ ಮಗನನ್ನು ಕಂಡು ದುಃಖಿಸಿದರು.. ಅವನನ್ನು ಸಮೀಪಿಸಿ ಅವನ ತಲೆ ನೇವರಿಸಿದವರು “ ಬಾ... “ ಎಂದು ಅವನ ಕೈಹಿಡಿದಿದ್ದರು ಅವನ ಅಮ್ಮಾ.. ಇನ್ನೊಂದು ಕೈಯನ್ನು ಅಪ್ಪಾ ಹಿಡಿದರು ಎಂದಿಗೂ ನಿನ್ನ ಜೊತೆ ನಾವಿಬ್ಬರೂ ಇರುವೆವು ಎಂಬಂತಿತ್ತು ಆ ಭಾವ.. ಕಾರಿನತ್ತ ಹೆಜ್ಜೆ ಹಾಕಲು ಮುಂದಾದ ಮಗನನ್ನು ಕರೆದುಕೊಂಡು ಪಕ್ಕದಲ್ಲೇ ಇದ್ದ ಪಾರ್ಕಿಂಗ್ ಕರೆದೊಯ್ದು ಅವನೊಂದಿಗೆ ತಾವು ಮಗುವಾಗಿ ಆಡಿದರು.. ತಂದೆ, ತಾಯಿಯ ಬದಲಾದ ವರ್ತನೆ ಶ್ಲೋಕಕ್ಕೆ ಭಯತರಿಸುತ್ತಾದರು ಸ್ವಲ್ಪ ಸಮಯದಲ್ಲೆ ಅವರೊಂದಿಗೆ ಬೆರೆತ.. ತಮ್ಮ ಮಗನ ಮೊಗದಲ್ಲರಳಿದ ನಗು ಕಂಡವರಿಗೆ ಇಷ್ಟು ದಿನ ತಾವು ಏನು ಕಳೆದುಕೊಂಡೆವು ಎಂಬುವುದರ ಅರಿವಾಗಿತ್ತು..

ಮನೆಗೆ ಬಂದವರು ತಾವೇ ಮಗನಿಗೆ ಊಟ ಮಾಡಿಸಿ ಅವನನ್ನು ಮಲಗಿಸಿದರು.. ಮರುದಿನ ಅವನನ್ನು ಕರೆದುಕೊಂಡು ಸ್ಕೂಲಿಗೆ ನಡೆದವರು ವಂಧ್ಯಾಳನ್ನು ಭೇಟಿ ಮಾಡಿ “ ನಮ್ಮ ಮಗ ಕೊಂಚ ದಡ್ಡನಾಗಿರಬಹುದು ಆದರೆ ನೀವು ಮಾಡಿದ ಪಾಠಗಳನ್ನು ಅರ್ಥೈಸಿಕೊಳ್ಳುತ್ತಾನೆ ಹಾಗೆಂದು ಮಕ್ಕಳ ಮುಂದೆ ಅವಮಾನ ಮಾಡಿ ಅವರಿಗೆ ಬೇಜಾರಾಗುವ ಹಾಗೆ ಮಾಡ್ಬೇಡಿ ಎಳೆಮನಸ್ಸು ದುಡುಕಿ ಬಿಡುತ್ತವೆ ಎಂದು ತಾಳ್ಮೆಯಿಂದಲೇ ಮಾತನ್ನಾಡಿ ಅವನ ಆರೋಗ್ಯವೀಗ ಸರಿಯಿಲ್ಲಾ ಇನ್ನು ಒಂದು ವಾರದಲ್ಲಿ

ಶಾಲೆಗೆ ಬರ್ತಾನೆ ” ಎಂದು ಅವನನ್ನು ಕರೆದೊಯ್ದರು.. ಅವರ ಮಾತನ್ನಾಲಿಸಿದ ವಂಧ್ಯಾಳಿಗೆ ತನ್ನ ತಪ್ಪಿನ ಅರಿವಾಗಿತ್ತು.. ಪುಟ್ಟ ಮಗುವಿನ ಜೊತೆ ಕೊಂಚ ತಾಳ್ಮೆಯಿಂದ ವರ್ತಿಸಬಹುದಿತ್ತು ಎನಿಸದೆ ಇರಲಿಲ್ಲಾ ಅವಳಿಗೆ..

ಶ್ಲೋಕನ್ನು ಕರೆದುಕೊಂಡು ಬೇರೆ ಊರಿಗೆ ತೆರಳಿದವರು ತಮ್ಮ ಕೆಲಸ, ಚಿಂತೆ ಎಲ್ಲವನ್ನೂ ಬದಿಗಿರಿಸಿ ಒಂದು ವಾರ ತಮ್ಮ ಮಗುವಿನೊಂದಿಗೆ ಮಗುವಾದರು.. ವಾರದ ನಂತರ ಮನೆಗೆ ಹಿಂದಿರುಗಿದ ಶ್ಲೋಕ್ ಇವನೇನಾ ಎಂಬಷ್ಟು ಬದಲಾಗಿತ್ತು ಅವನ ವರ್ತನೆ.. ಲೋಕವೇ ಬೇಡ ಎಂಬಂತಿರುತ್ತಿದ್ದ ಹುಡುಗ ಈಗ ವಯೋಸಹಜ ತುಂಟತನದ ಮೂಲಕ ಮನೆಯವರನ್ನು ನಗೆಗಡಲಲ್ಲಿ ಮುಳುಗಿಸುತ್ತಿದ್ದ..

ಶಾಲೆಯಲ್ಲೂ ಕೂಡ ಮಂದಮತಿಯಾಗಿರದೆ ಒಂದು ಮಟ್ಟಿಗೆ ಚುರುಕಾಗಿದ್ದ.. ಶಾಲೆಯಲ್ಲಿ ಶಿಕ್ಷಕರು ಹೇಳಿಕೊಟ್ಟ ಪಾಠವನ್ನು ಅವನ ತಾಯಿಯ ಕುಳಿತು ಮರು ಅಧ್ಯಯನ ಮಾಡಿಸುತ್ತಿದ್ದರು.. ಅವಶ್ಯಕತೆ ಇದ್ದರೆ ಮಾತ್ರ ಅವನಿಗೆ ಗದರುತ್ತಿದ್ದರು ಅಷ್ಟೆ ಅದನ್ನು ಶ್ಲೋಕ್ ಅರ್ಥೈಸಿಕೊಂಡು ತನ್ನ ತಾಯಿಯನ್ನು ಋಷಿ ಪಡಿಸುವುದಕ್ಕಾಗಿ ಓದುತ್ತಿದ್ದನೆ ಹೊರತು ಅವರ ಭಯಕ್ಕಲ್ಲಾ... ಹೀಗೆ ತಾಯಿ ಅಧ್ಯಯನಕ್ಕೆ ಸಹಾಯ ಮಾಡಿದರೆ ತಂದೆ ಅವನೊಂದಿಗೆ ಆಟವಾಡುತ್ತ ಒಬ್ಬ ಉತ್ತಮ ಗೆಳೆಯನಾಗಿ ಅವನ ಮನದ ಭಾವನೆಗಳನ್ನು ಅರಿಯುವ ಪ್ರಯತ್ನ ಮಾಡಲಾರಂಭಿಸಿದರು ಇದರಿಂದ ಶ್ಲೋಕ್ ತನ್ನ ಮನದಲ್ಲಿರುವ ಒಳ್ಳೆಯ ಹಾಗೂ ಕೆಟ್ಟ ಭಾವನೆಯನ್ನು ತಂದೆಯ ಎದುರು ತೆರೆದಿಟ್ಟು ಅವರಿಂದ ಸರಿ ತಪ್ಪುಗಳನ್ನು ಅರ್ಥೈಸಿಕೊಳ್ಳತೊಡಗಿದ...

Pray tell me

Why would I adore your curls?  
For they always strangled me to death

Why would I write an ode on your eyes  
For they always hunted my dreams

Why would I always speak of your beauty  
For it always proved beast to my lamb

Why would I kiss your mirror  
For it always bitten my clothes

Why would I care take of your photos  
For half my life is slit in them

Pray tell me why would I?  
For I always chained my longing;  
In the cries of a widowed cat  
But you never proved your love  
Out of the spheres of gold!



By Kashif Riyaz Dar  
3rd year Mechanical, M1 Batch



# ಕನಸಾಯಿತೆ ನನಸು !!

- ಕಾವ್ಯಶ್ರೀ, 7ನೇ ಸೆಮಿಸ್ಟರ್, ECE



ಹಾಗೆ ಮಲಗಿದ ನನಗೆ ಒಮ್ಮೆಲೆ ಎಚ್ಚರವಾಯಿತು! ಕಣ್ತೆರೆದು ನೋಡಿದಾಗ ಪಕ್ಕದಲ್ಲಿ ನನ್ನ ಸ್ನೇಹಿತರು ಕುಳಿತುಕೊಂಡಿದ್ದರು. ಎದುರುಗಡೆ ಅಧ್ಯಾಪಕರು ತರಗತಿಯನ್ನು ನಡೆಸುತ್ತಿದ್ದರು. ನಮಗೆಲ್ಲ ತರಗತಿಯ ನಡುವೆ ತಿಂಡಿ ತಿನಿಸುಗಳನ್ನು ತಿನ್ನುವ ಅಭ್ಯಾಸ. ಅಧ್ಯಾಪಕರಿಗೆ ಗೊತ್ತಾಗದ ರೀತಿಯಲ್ಲಿ ತಿನ್ನುವ ಕಲೆಯು ನಮ್ಮಲ್ಲಿ ಆಗಾಗಲೇ ರೂಢಿಯಾಗಿತ್ತು. ತದನಂತರ ಅಧ್ಯಾಪಕರು ತರಗತಿ ಮುಗಿಸಿ ಹೋದರು. ಮುಂದಿನ ತರಗತಿ ಶುರುವಾಗುವ ಮುನ್ನ ವಿರಾಮವಿತ್ತು. ಆ ಸಮಯದಲ್ಲಿ ಎಲ್ಲರ ಜೊತೆ ಮಾತನಾಡುತ್ತಾ...ನಗುತ್ತಾ...ಕಾಲಹರಣ ಮಾಡಿದೆವು. ಅಧ್ಯಾಪಕರು ಬಂದ ತಕ್ಷಣ ನಮ್ಮ ನಮ್ಮ ಜಾಗದಲ್ಲಿ ಹೋಗಿ ಕುಳಿತೆವು. ಆಗ ತಾನೆ ಬಂದವರು “ಈ ಮಂಗಳೂರಿನ ವಾತಾವರಣ ನನಗೆ ಸರಿಹೊಂದುವುದಿಲ್ಲ. ನಾನೇನಾದರೂ ಕೆಳಗೆ ಬಿದ್ದರೆ ನನ್ನ ಹೆಂಡತಿಗೆ ತಿಳಿಸಿಬಿಡಿ. ಆಕೆಯ ಮೊಬೈಲ್ ಸಂಖ್ಯೆಯನ್ನು ಮೊದಲನೇ ಹೆಂಡತಿ ಹಾಗೂ ಎರಡನೇ ಹೆಂಡತಿ ಎಂದು ಉಳಿಸಿರುವೆ “ಎಂದರು. ನಾವೆಲ್ಲಾ ಒಂದು ಕ್ಷಣ ದಂಗಾಗಿ ಬಿಟ್ಟೆವು. ಹಾಗೆಯೇ ಒಂದು ಸಣ್ಣ ನಗುವನ್ನು ಬೀರುತ್ತಾ “ತಪ್ಪು ತಿಳಿದುಕೊಳ್ಳಬೇಡಿ !! ಆಕೆಗೆ ಎರಡು ಸಂಖ್ಯೆ ಇದೆ “ ಎಂದು ಸಮರ್ಥಿಸಿದರು. ಹಾಗೆ...ಹೀಗೆ... ತಮಾಷೆ ಮಾಡುತ್ತಾ ತರಗತಿ ನಡೆಸಿದರು. ಅಂತೂ ತರಗತಿಯನ್ನು ಋಷಿಯಿಂದ ಕಳೆದವು. ಆದರೆ ನಂತರ ಬಂದ ಅಧ್ಯಾಪಕರು ತುಂಬಾ ಗಂಭೀರರಾಗಿದ್ದರು. ಎಲ್ಲರಿಗೂ ಒಂದು ಪ್ರಶ್ನೆಯನ್ನು ಕೇಳಿದರು. ನಾವೆಲ್ಲ ಎಷ್ಟು ಹೊತ್ತಿಗೆ ಏಳುತ್ತೇವೆ ಎಂದು. ಎಂದಿನಂತೆ ನಾವೆಲ್ಲ ಸರಿಸುಮಾರು 7 ಗಂಟೆಯ ಹೊತ್ತಿಗೆ ಏಳುತ್ತೇವೆ ಎಂದು ಉತ್ತರಿಸಿದೆವು. ಆದರೆ ಒಬ್ಬ ವಿದ್ಯಾರ್ಥಿ ತಾನು 3 ಗಂಟೆಗೆ ಏಳುವುದಾಗಿ ಹೇಳಿದ. ಅಧ್ಯಾಪಕರಿಗೆ ತುಂಬಾ ಋಷಿಯಾಯಿತು. “ಅಷ್ಟು ಬೇಗ ಎದ್ದು ಏನೆಲ್ಲ ಓದುವೆ? ಹೇಗೆಲ್ಲಾ ಕಲಿಯುವೆ? ಎಲ್ಲರಿಗೂ ತಿಳಿಸು” ಎಂದರು. ಆತನು ಉತ್ತರಿಸಲು ಹಿಂಜರಿದರೂ ತಾನು ಬೇಗ ಎದ್ದು ಅಡುಗೆ ಮನೆಗೆ ಹೋಗಿ ನೀರು ಕುಡಿದು ಮತ್ತೆ ಬಂದು ಮಲಗುವೆ ಎಂದಾಗ ಅಧ್ಯಾಪಕರು ಅವರ ಗಾಂಭೀರ್ಯತೆಯನ್ನು ಪಕ್ಕಕ್ಕೆಟ್ಟು ವಿದ್ಯಾರ್ಥಿಗಳ ಜೊತೆಗೆ ಜೋರಾಗಿ ನಕ್ಕರು!!

ಈಗ ಊಟದ ಸಮಯ. ಈ ಸಮಯ ಸುಮಾರು ಒಂದು ಗಂಟೆಯ ಕಾಲವಿರುವುದರಿಂದ ಬೇಗನೇ ಊಟ ಮುಗಿಸಿ ನಮ್ಮ ಕಾಲೇಜನ್ನು ಸುತ್ತು ಹಾಕುವ ಅಭ್ಯಾಸ. ಮಾತನಾಡುತ್ತಾ... ತಮಾಷೆ ಮಾಡುತ್ತಾ... ಒಂದಷ್ಟು ಛಾಯಾಚಿತ್ರಗಳನ್ನು ತೆಗೆದುಕೊಳ್ಳುತ್ತಾ...ಬೇರೆ

ವಿಭಾಗದ ಸ್ನೇಹಿತರನ್ನು ಭೇಟಿ ಮಾಡುತ್ತಾ...ಋಷಿಯ ಕ್ಷಣಗಳನ್ನು ಅನುಭವಿಸುವ ಸಮಯವದು. ಮಧ್ಯಾಹ್ನದ ತರಗತಿಯಲ್ಲಿ ಎಲ್ಲರೂ ತುಂಬಾನೇ ಗಲಾಟೆ ಮಾಡುತ್ತಿದ್ದರು. ನನಗಂತೂ ತಡೆಯಲಾಗದೆ ಅಲ್ಲೇ ತಲೆಬಗ್ಗಿಸಿ ಮಲಗಿಕೊಂಡೆ. ಅಧ್ಯಾಪಕರು ಬಂದವರೇ ವಿದ್ಯಾರ್ಥಿಗಳೇ, ದಯವಿಟ್ಟು ಯಾರಾದರೂ ಉತ್ತರ ಕೊಡಿ? ಮಾತನಾಡಿ? ಬಾಯ್ತೆರೆದು ಮಾತನಾಡಿ? ದಯವಿಟ್ಟು ಮಾತನಾಡಿ? ಎಂದು ಹೇಳುತ್ತಿದ್ದಾರೆ!! ಅರೆ! ನನಗೆ ಇಷ್ಟೊಂದು ಗಲಾಟೆ ಕೇಳುತ್ತಿದೆ. ಇವರೇಕೆ ಹೀಗೆ ಮಾತನಾಡುತ್ತಿದ್ದಾರೆ ಎಂದು ಆಶ್ಚರ್ಯದಿಂದ ಎದ್ದಾಗ “ಓ ಭ್ರಮೆ” ಎಂದು ಹೇಳುತ್ತಾ ಸ್ಯಾಂಡಲ್ ವುಡ್ ನಟ ಸುದೀಪ್ ಅವರು ಕಣ್ಣು ಮುಂದೆ ಬಂದರು. ಆಗ ನನಗೆ ತಿಳಿಯಿತು ನನ್ನ “ನನಸು ಕನಸಾಯಿತು...” ಆನ್‌ಲೈನ್ ತರಗತಿ ನಡೆಯುತ್ತಿದ್ದಾಗ ನಿದ್ರೆ ಬಂದ ಪರಿಣಾಮ ಇದು ಎಂದು. ನನ್ನ ಹಾಗೇ ನಿದ್ರೆ ಮಾಡುತ್ತಿದ್ದ ಮಕ್ಕಳನ್ನು ನೋಡಿ, ಅಧ್ಯಾಪಕರು ಮನಸ್ಸಿನಲ್ಲಿ “ಗುರು-ಶಿಷ್ಯ! ಎಂತಹ ಸಂಬಂಧ, ಏನು ಆನಂದ, ಇದೆಂತ ನೋಟ, ಇದು ನಮ್ಮ ತರಗತಿನ! ಅಯ್ಯೋ ದೇವರೇ! ಈಗ ತಿಳಿಯಿತು? ಆಫ್‌ಲೈನ್ ತರಗತಿ ನಡೆಯುತ್ತಿದ್ದರೆ ಈ ವೈಭವನೆಲ್ಲ ನೋಡೋಕೆ ಆಗುತ್ತಿತ್ತಾ? ದೇವರೇ ಎಂಥ ಮಕ್ಕಳಿಗೆ ಕಲಿಸುತ್ತಿದ್ದೇನೆ! ಒಂದೊಂದು ಒಂದು ಮುತ್ತುಗಳು. ತಪಸ್ಸು ಮಾಡಿ ಪಡೆಯಬೇಕು ಇಂಥವರನ್ನು!!” ಅಂದುಕೊಂಡಿರಬಹುದೇನೋ. ಹೀಗೆ ಆನ್‌ಲೈನ್ ತರಗತಿಯು ವಿದ್ಯಾರ್ಥಿಗಳಿಗಲ್ಲದೆ ಶಿಕ್ಷಕರಿಗೂ ಕಷ್ಟಕರ. ನಮ್ಮ ನಾಲ್ಕು ವರ್ಷದ ಇಂಜಿನಿಯರಿಂಗ್ ಕಲಿಕೆಯಲ್ಲಿ ಅನುಭವಿಸಬೇಕಾದ ಅದೆಷ್ಟೋ ಸಂತೋಷದ ಕ್ಷಣಗಳನ್ನು, ಪಡೆಯಬೇಕಾದ ಜ್ಞಾನವನ್ನು ಕಳೆದುಕೊಂಡೆವು. ಇನ್ನುಳಿದ ಸಮಯದಲ್ಲಾದರೂ ಆ ಕ್ಷಣಗಳೆಲ್ಲ ಮರುಕಳಿಸಬಹುದು? ಮತ್ತೆ ಎಲ್ಲವೂ ಮೊದಲಿನಂತಾಗಬಹುದೇನೋ ಎಂಬ ಭರವಸೆಯನ್ನು ಹೊಂದುತ್ತಾ? ಕನಸು ನನಸಾಗಬಹುದೇ ಅಥವಾ ನನಸು ಕನಸಾಗಬಹುದೇ ಎಂಬ ನಿರೀಕ್ಷೆಯಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿರೂಪಿ !!

# OFFLINE



# ONLINE

Carrying each and every single work online is a new normal today. It may be from buying necessary stuff to doing 8 to 5 jobs. So let's go back to history. The first security transaction over web was either by net market or internet shopping network in 1994. Stan ford federal credit union was the first financial institution which offered online internet banking in 1994. Online buying and selling was present even at the time of 90's and in recent years it has gained popularity. It has increased even more in last two years due to global pandemic.

There are many things that are transformed from offline to online. As I am a student let me first begin with the shift of classes from offline to online. This shift has changed many things in the student's life. First thing is that the students have become lethargic. Earlier during my offline classes I used to wake up at 6 o'clock in the morning and carry out the daily chores but now after the shift of classes to online I wake up 5 minutes before the class begins, which is at 8:55 a.m. and sometimes even I sleep in the bed and listen to the class. When we had offline classes I would run to catch the bus to reach college but now I just sit at home and gain weight. When we had offline class if we had felt sleepy or dizzy we would just gaze outside the window to see the beautiful butterflies playing with flowers, watching people who had free period walking through corridors or watching people playing in the playground and feel the soothing breeze by watching the shaky leaves of trees . And finally switch our minds back to the classroom when the teacher throws the chalk piece on our forehead. But in case of online class if we feel sleepy the only option is to sleep and we have no one to wake us up. Another disadvantage of online class is the network issue which is faced by students many times. Continuous watching of the screen during the online class puts stress to eyes. All these problems are faced by every student due to online classes even the small kids, they really miss the joy of going to school and make friends.

So now let's move on to the shift of offline shopping to online. Online shopping has a huge advantage to retailers. If a person has just began his selling business it is difficult for him to get wide recognition. But e-selling would give him wide recognition. If he's dealing with a wide range of products he can do it in a single site through online selling. He can keep his business open for 24/7 hours. As for customers they get some kind of offers through online shopping . Since now people lead a busy life online shopping is more convenient than offline. The main disadvantage of online shopping are we cannot really touch the item, cannot bargain, sometimes hidden cost and shipping charges. E-payment is the method of paying money through online. E-payment is really a good way of payment method. It provides payment security. You don't have to carry any actual money you just need to have a phone with scanner or e-payment app installed in it to pay for any stuff you buy. The disadvantage of this is we can be the prey of online frauds. We need to be careful while carrying out the transaction. We even have online food and grocery delivery. I personally feel that people should spare some time to go to the grocery shop instead of buying them online. Nowadays all the applications are filled through online. Shift of applications and books to online has reduced the use of paper which in turn has reduced cutting of trees. Before the testing the quality of soil,crops etc was done manually in labs but now the farmers have some programmed app installed in their phone which does the work of labs. We now can carry out health check up at home with the programed apps installed in our mobile. Even funnier is nowadays people choose their life partner online.

Many more stuffs are carried out online which I may have not mentioned here. The shift of things from offline to online has both disadvantage and advantage equally.

The exposure that students get through offline classes with labs with friends cannot be replaced by stimulation which is done in the laptop and through online classes. Joy of going out to have Street chats or for buying stuffs cannot be replaced by online shopping.

I conclude by saying that getting things done offline is more joyful than online. Opt for online only when it's impossible for you to step out.

Thank you .



**Vachananjali A Biradar**  
2nd year EEE

# THE CROWN OF KASHMIR

Shalimar Bagh is a Mughal garden in Srinagar Jammu and Kashmir India linked through a channel to the north east of dal lake it is also known as Farah baksh and Faiz baksh. The other famous shore line garden in vicinity is Nishat Bagh Shalimar was built by Mughal emperor Jahangir for his wife nur Jahan in 1619 the Bagh is considered the point of Mughal horticulture.

The ancient history of the garden can be traced to the 2nd century when it was built during the reign of Pravarasena II. It was Pravarasena II who found Srinagar and he ruled Kashmir from 79 A.D to 139 A.D. The Shalimar in Sanskrit means home of love. It was the visiting place of the saint called Sukarma Swami. It was then Emperor Jahangir that celebrated Shalimar Bagh as his dream project to please his queen. During the Mughal period emperor Jahangir and his wife Nur Jahan were so in love of Kashmir that during summer they moved to Srinagar from Delhi at least 13times Shalimar Bagh was their imperial residence. During the rule of Maharaja Ranjit Singh it was the guest house for European visitors.

There are three terraces in the garden. The first terrace is a public garden. In this hall a small black marble throne was installed over the waterfall it's called Dewanay aam (audience hall).The second terrace garden is alone the axial channel which has two shallow terraces dewanay khaas(private hall).It was accessible only to the noble men or guests of the court. The royal bathrooms are located on the northern west boundary of enclosure. In the third terrace the axial water channel flows through the zannana garden which is flanked by dewanay khaas and chinar trees. At the entrance of the garden there are

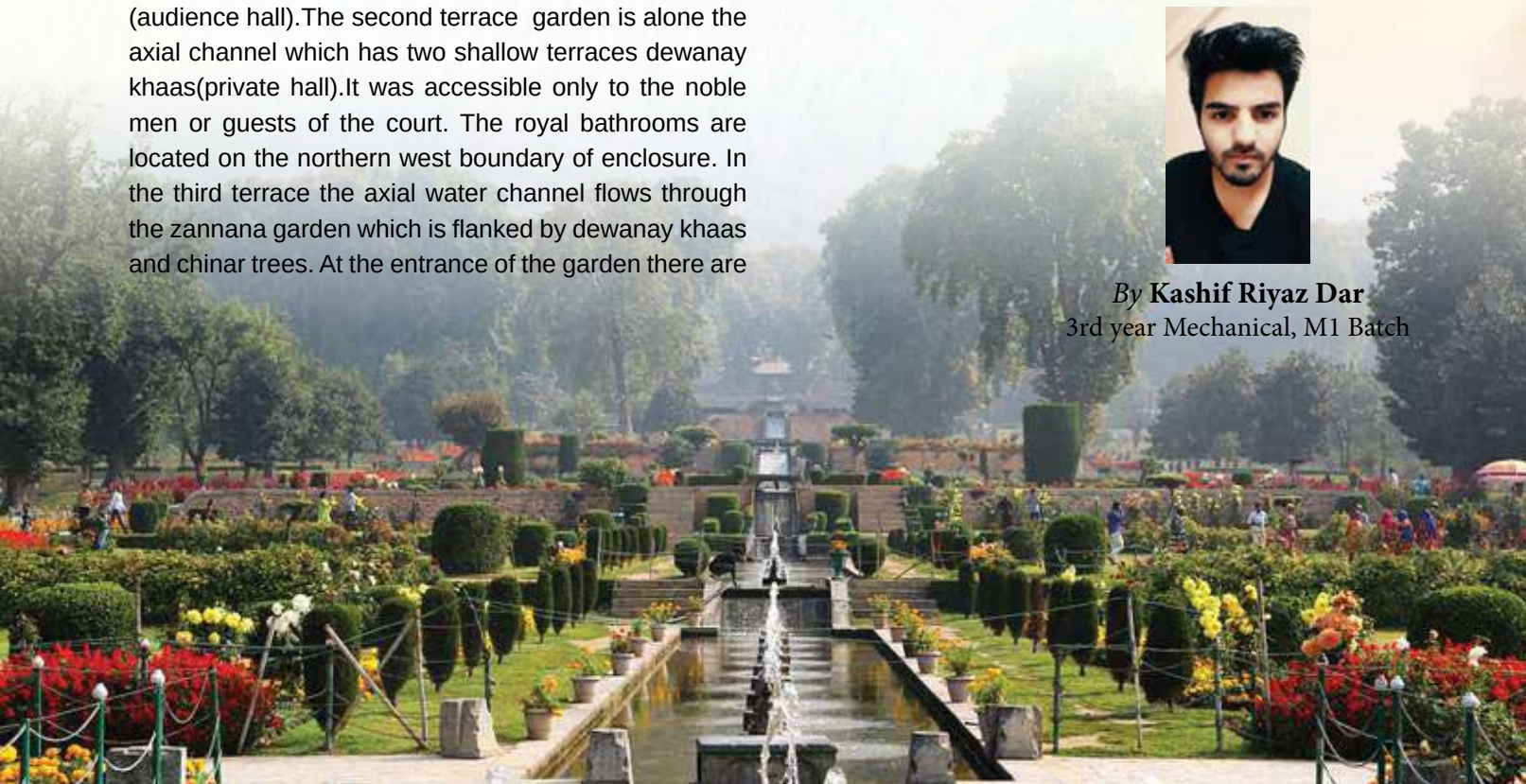
t w o  
small



pavilions which are the restricted and controlled entry zone. There are at least 410 fountains in the Shalimar Bagh. Garden is considered very beautiful during the autumn and spring seasons due to colour change in leaves of the famed chinar. Trees the garden was the inspiration for the same name of garden in Delhi and Lahore.



By **Kashif Riyaz Dar**  
3rd year Mechanical, M1 Batch



# ONLINE vs OFFLINE EDUCATION



Education in simple words is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs and habits. Education is what helped the human race progress and evolve through the ages. It is majorly responsible for the decent human behaviour that we observe in most if not all people. It can be compared to a guide that helps us throughout our life. From the past many decades there have been discussions on digitalizing the formal education system but it became the only option to all of us when the pandemic struck us by surprise. Since then there has been a spike in debates and discussions on whether online education should prevail even after the pandemic. Considerable amount of people are either for or against this idea. I personally feel online education has its own pros and cons.



Among the advantages of online education we eliminate the distractions that arise in an offline classroom such as chatting with friends. In a broader perspective, we save tons of electricity that's used in large schools and colleges. It also decreases our carbon footprint with no need to use transport, may it be public or private vehicles. It saves a lot of time usually used for transport. With no need of uniforms in online class, we save a lot of clothing material too. But all these advantages concern the authorities and parents rather than the students. Coming to the disadvantages, even though we have eliminated distractions that arise in an offline class, there are a lot of distractions that arise in an online class. Students especially in their teens are known to be mischievous and cunning, the only person keeping them in check would be the teachers. With them

being physically absent, it gives the students the extra leeway to be naughty. Even if we consider the students to be totally honest and sincere, there are other problems too. Issues that arise that aren't in our control like the internet, or the device, or the server. These malfunctions heavily impact the students not only physically but also mentally. Out of all these our main concern still remains the all-round development of the student, the education system in India is all set to take a new turn which aims largely in extracurricular and physical activities which aren't possible online. With least social interaction and almost no physical activity the online mode of education will highly affect the student's personality development. I could go on and on about the disadvantages but I guess we have established that the disadvantages seriously outweigh the advantages.

This doesn't necessarily mean that online mode of education is bad. I personally feel that at the rate our technology is improving, there are going to be smart solutions to all the disadvantages. If online mode of education could give out similar outcomes like offline education, pertaining to the student's behaviour, studies and all-round development it can be a viable option in the future.



**LEETHESH KOTIYAM**  
First year F section ,EC

# WHY SHOULD I LOVE I LOVE MY ENEMY?

*“Love is the only force capable of transforming an enemy into friend.”*

- Martin Luther King Jr.

This isn't an easy question, and I won't be able to explore all the possible answers — that would take a book. But let's look briefly at a few strong reasons:

- **It's better for society.** This one seems obvious to me, but it's important. One little relationship might not seem to make a difference to society as a whole — who cares if I hate another person? But if we all hate other people, it creates a more divisive and fractured and angry society. I see the effects of this everywhere, from media and culture to politics to business to families being disrupted. And the opposite is true — if we can overcome that hatred, and learn to love our neighbor and our enemy, society is better off in so many ways.
- **It's a test of mine as a person.** This might not be important to many people, but for me it is. I like to think of myself as a good person, but how good am I if I am just loving to my family and friends? That's extremely easy (usually). But a better test of my goodness is if I can overcome feelings of hatred or resentment, and turn them into feelings of love. That's a true challenge. And it's a life-long challenge.
- **I'll be happier.** If I have anger or resentment inside of me, even if I don't think about it all the time, there will be times when it surfaces. And that makes me unhappy. It's destructive, inwardly (it eats me up) and outwardly (I might do destructive things to others). That anger also affects others around me, such as my loved ones, who are most likely affected in some way when I am angry — even if the anger isn't directed at them. Removing this anger from myself is a positive thing, and it will make me happier overall.
- **I could make a friend.** One of the most powerful effects of learning to love my enemy is that my enemy can become my friend. And while it

is counterproductive to be fighting with an enemy (it hinders my progress), it is very productive to add new friends to my life — they can help me accomplish things, for example. A new friend, instead of an enemy, makes an incredible difference. And if that enemy is a family member or former friend, reuniting can be extremely powerful and important.

- **I could change that person's life.** My enemy is a human being, and it's very possible that I hatred of that person is a source of grief, tension, or hatred in them. Now, that might feel good to me in a vindictive way, but if I look at it objectively, removing my feelings from the situation ... hurting another person is always a bad thing. Making them happier is a good thing. And interestingly, making someone happier, no matter who that is, can make us happier.
- **I set a better example for others.** Our actions set an example for other people in our lives. If I have children, for example, they learn from anything I do. Teaching them to hate is not a positive example. But teaching them to overcome that anger and hate, to make up with an enemy, and to love ... there is no better example in life...



**Mr Immanuel Jayakar Ammann**

*Lab Assistant*

*Department of Mechanical Engineering*

# SPACE RACE



If we want to know whether there is life beyond Earth then the quickest way to answer that question is to explore Mars. That exploration is currently being done by remote space probes sent from Earth.

Mars has captivated humans since we first set eyes on it as a star-like object in the night sky. Early on, its reddish hue set the planet apart from its shimmering siblings, each compelling in its own way. Since the 1960s, humans have set out to discover what Mars can teach us about how planets grow and evolve, and whether it has ever hosted alien life. So far, only uncrewed spacecraft have made the trip to the red planet, but that could soon change. NASA is hoping to land the first humans on Mars by the 2030s and several new missions are launching before them to push exploration forward.

It's worth looking at how we got to where we are

now in terms of humans in space and space exploration. The Moon is as far as humans have explored in space but we've sent probes to explore the other planets in our Solar system, including Mars

The race is on though to send human explorers to Mars and a number of Earth-bound projects are trying to learn what life would be on the red planet. But the notion of any one-way human mission to Mars is nonsensical, as is the thought that we should colonise Mars simply because we are making a mess of Earth. The first suggestion is pointless and unethical we would be sending astronauts to their certain death while the second would be a license for us to continue polluting our home planet.

Over the last century, everything we've learned about Mars suggests that the planet was once quite capable of hosting ecosystems and that it might still be an incubator for microbial life today. I believe we should go to Mars because of what we can learn from the red planet, and from developing the technologies to get people there safely.



**Anushka Rao**  
3rd year ME

## ಕೊನೆಯ ಕವಿ

ಬಾಳಿನ ಈ ಪುಟದಲಿ  
ಕೊನೆಯ ಕವಿತೆ ಬರೆಯುವೆ  
ಕವಿತೆ ಮುಗಿಯುವ ತನಕವು  
ಇರಲಿ ನನ್ನ ಪ್ರಾಣವು ||ಪ||

ಮೇಣದಂತೆ ನನ್ನ ದೇಹವು  
ಕರಗಿ ಹೋಗುತ್ತಿರುವುದು  
ಎಣ್ಣೆ ಇಲ್ಲದೆ ಪ್ರಾಣ ಜ್ಯೋತಿಯು  
ನಂದಿ ಹೋಗುತ್ತಿರುವುದು.

ಅಟ್ಟಹಾಸದಿ ನಗುತ್ತಿರುವುದು  
ವಿಧಿಯು ನನ್ನನು ನೋಡುತ್ತ  
ಯಾವ ಘಳಿಗೆಯಲು ಸಾವು ಬರುವುದು  
ಕಟ್ಟ ಕಡೆಗಿದು ಖಂಡಿತ

ನೂರು ವರುಷ ಬಾಳಿ ಬದುಕಿ  
ಎಂದು ಹರಸಿದೆ ನಿಮ್ಮನು  
ನನ್ನ ಬಾಳಿಗೆ ಅಂತ್ಯ ಬರೆದು  
ವಿಧಿಯ ಹರಸಿದ ನನ್ನನು

ಬಾಳಿನ ಈ ಪುಟದಲಿ  
ಕೊನೆಯ ಕವಿತೆ ಬರೆದೆನು  
ಕವಿತೆ ಮುಗಿದೇ ಹೋಯಿತು  
ಇನ್ನು ಹೋಗಲಿ ನನ್ನ ಪ್ರಾಣವು.



**ರಾಜೇಶ ಆಚಾರ್ಯ**  
ಲ್ಯಾಬ್ ಇನ್ ಕ್ಲರ್ಕ್, ಯಾಂತ್ರಿಕ ವಿಭಾಗ

# Things to Expect for the Future of MECHANICAL ENGINEERING



- Harshith  
Lab Instructor, Dept of ME

Mechanical engineering is considered the broadest of all engineering disciplines, mainly due to the field's overlap with other areas of study, such as civil, chemical, and industrial engineering. As a result, mechanical engineers can be found in numerous industries working on a wide range of projects. The flexibility of this field has historically led to rich job prospects for mechanical engineers, and the same seems to hold true for the future. Employment for mechanical engineers is expected to grow at 4% annually between 2018 and 2028, according to the U.S. Bureau of Labor Statistics. They do, however, also mention that this rate will most likely favor those who stay well-informed with the latest technological advances. While core mechanical engineering principles, such as thermodynamics, fluid mechanics, and machine design are still valid, expertise in composites, mechatronics, and nanotechnology are in increasingly high demand.

## A Look at the Future of Mechanical Engineering

These new subject areas, which are the result of modern advancements, are prerequisites for several emerging and promising fields, including artificial intelligence, biomechatronic, and nanotechnology. Some of the areas where mechanical engineers are expected to be in high demand include:

### Electric Vehicles:

The transportation sector continues to generate the largest share of greenhouse gas emissions in the Country. Mounting pressures to use alternative sources of energy has helped to fuel the rise of electric vehicles. While mechanical engineers have always been essential in the automotive industry, their role is vital now more than ever. Replacement of the traditional internal combustion engine with cleaner, battery-powered systems brings new challenges regarding torque and energy loss, and the design of mechatronics to support new electrical systems. Furthermore, as vehicle manufacturing becomes more automated, mechanical engineers will be front and center in the design of robotics and assembly lines.

### Nanoengineering:

Nanotechnology refers to the manipulation of materials at the smallest level. This rapidly growing field is one that

offers abundant opportunities for mechanical engineers. In the years ahead, mechanical engineers are expected to be integral in using nanotechnology to:

- Create stronger composite materials
- Develop superior renewable energy storage systems
- Create advanced biomedical devices

### Biomechatronic:

The role of mechanical engineers in robotics is taken a step even further with the rapid growth of biomechatronic. This field, which seeks to merge body and machine, involves the design and testing of complex and intricate device architectures that mimic the body's musculoskeletal design. Mechanical engineers will be primarily involved in the design of mechanical sensors, controllers, and actuators for biomedical devices used in prosthetics and miniature medical implants. In addition to the medical field, research is also being carried out on the use of biomechatronic in the military industry.

### Manufacturing:

Manufacturing is an ever-evolving field. Mounting pressures to increase production efficiency while minimizing operating costs have fueled demand for new and innovative technologies. Automation and robotics (an area in which mechanical engineers are vital) continue to be essential in helping manufacturing industries keep up with consumer demand while maximizing profit. However, to despite the exponential growth of the manufacturing industry, many manufacturers are finding difficulty filling vacant positions for skilled workers, engineers included. This industry is therefore ready with opportunities for professionals with mechanical engineering degrees.

While new technologies have no doubt changed the engineering landscape, the future looks bright for the mechanical engineering industry. New fields of study and subject areas will favor engineering graduates. Practicing professionals, however, will need to keep up-to-date with current and future advancements to avoid being left behind.

# CO Poisoning in High-Temperature Polymer Electrolyte Membrane Fuel Cells



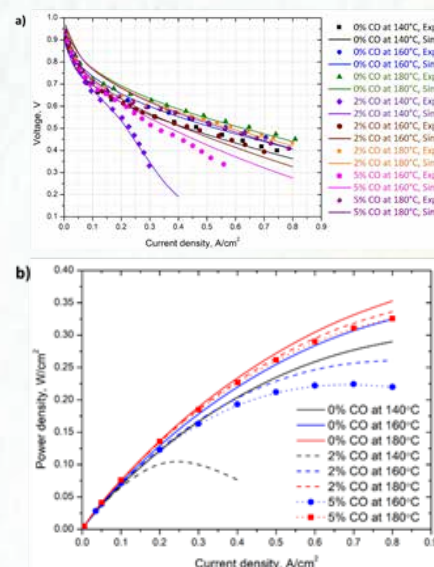
**Mr Venkatesh Babu KP**  
Research Scholar

Applied Engineering and Computational Analysis laboratory (AECAL), SJEC

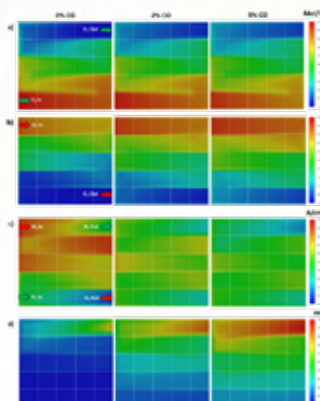
As a growing concern towards health and environmental issues arise due to the emission of toxic gases from fossil fuels, a search for a new energy source has been a research topic for several decades. One such energy with minimal or zero environmental degradation is using hydrogen as an energy carrier in the Fuel cell. A fuel cell is an electrochemical device that converts chemical energy into electrical energy with water and heat as byproducts. The fuel cell operation is clean, quiet, and highly efficient. Among different types of fuel cells, proton exchange membrane fuel cell has attracted researchers and industries due to simple management of the plant and its high performance. Proton exchange membrane fuel cells are further classified based on the operating temperature, which are Low-temperature proton exchange membrane fuel cell (LT-PEMFCs) and High-Temperature proton exchange membrane fuel cell (HT-PEMFCs).

HT-PEMFC generally operates at 393.15 K to 473.15 K and uses phosphoric acid (PA) based Polybenzimidazole (PBI) as a membrane showing several advantages over LT-PEMFC low water management, simple cooling system and does not require external humidifier for proton conduction and high tolerance level of impurities. Many researchers have investigated the effect of impurities such as carbon dioxide, nitrogen, and carbon monoxide in the reformat fuel on fuel cell performance, and it is reported that a small amount of CO can make a significant effect on fuel cell performance. Several theoretical models are available in the published literature to understand CO poisoning in the fuel cell and its consequences on cell performance and degradation of the various components in the cell. Researchers have made many efforts to increase the CO tolerance; it is believed that the Pt is the best material for electrochemical oxidation of hydrogen at the anode, but when it comes to reformat hydrogen Pt deteriorates quickly by blocking the surface area by chemisorption of CO on Pt catalyst, since CO has more affinity towards Pt than hydrogen. The three main strategies recommended in the literature for mitigating CO poisoning of the catalyst surface are: i) operating the cell at elevated temperatures, which lower the CO coverage on the Pt surface (but results

in a shorter cell life), ii) alloying Pt with noble and non-noble metals such as Pt-Ru alloy, where Ru weakens the bonding strength of CO to Pt, and iii) creating an oxidative environment for CO to promote water gas shift reaction. Applied Engineering and Computational Analysis laboratory (AECAL) at St Joseph Engineering College, Mangaluru, is actively engaged in fuel cell research, focusing on its performance, durability, and reliability.



HT-PEMFC at different operating temperatures with various CO concentration levels in the anode fuel stream; a) polarization curves and b) power density curves.



Distribution of (a) hydrogen in anode CL, (b) oxygen in cathode CL, (c) current density in membrane, and (d) overpotential in anode CL at operating voltage 0.4 V with pure H<sub>2</sub>, 2% CO, and 5% CO in the anode feed



# MULTIPURPOSE DRONE FOR RESCUE SERVICES DURING FLOODING SCENARIOS

By : Amal Tom, Deep Ghetia, K Adarsh Rao, Kurian Joseph, Dr Kavitha K Mahesh

## Abstract :

In the Modern Era of fast-moving technology, and increasing wealth, lifestyle in developing countries, the number of people in an adequate wealth and living conditions has led to ever increasing demand for consumer products and needs. This has led to growth in number of industries especially in developing countries. There is exponential increase in effect to the environment created by all these factors. Floods are made more likely by the more extreme weather patterns caused by long-term global climate change. Change in land cover—such as removal of vegetation—and climate change increase flood risk. Extreme floods can be triggered by intense precipitation, longer duration, close repetition of precipitations or a combination of these. When flooding inundates a home or community, it upends lives and introduces a litany of potential short- and long-term consequences. The most obvious include loss of life (floods cause more than 100 U.S. fatalities annually) and vast property damage. Repairing and replacing flood-damaged roads, bridges, utilities, and other public infrastructure cost FEMA an estimated \$48.6 billion between 1998 and 2014.

Unmanned Aerial Vehicles (UAV) technology has recently been recognized as an efficient photogrammetry data acquisition platform to quickly deliver high-resolution imagery because of its cost-effectiveness, ability to fly at lower altitudes, and ability to enter a hazardous area.

But, real-time application for prediction of damages occurred from a flood has not been used appropriately. The proposed project “VTOL” has an effective use of live streaming of camera video and images data to produce inundation mapping and to assess flood hazards in near real-time. Flood maps can be prepared using data from satellites, aircraft, and Unmanned Aerial Vehicles. Several researchers studied flood risk assessment using satellite and aerial images for large-scale projects. The UAV technology can sufficiently generate faster and more accurate data at much lower costs for rapid flood assessment. Drone used in the project can effectively acquire high-resolution data for fast and accurate detection of inundated areas under complex urban landscapes as well as inaccessible areas due to hazardous environments as compared to other data

acquisition approaches.

The proposed project uses CNN as image classification method for detecting water bodies and its surrounding area. CNNs have demonstrated excellent performance on various tasks including image classification, feature extraction, and segmentation. CNNs can learn features automatically from large datasets through the organization of multi-layers of neurons and have the ability to implement nonlinear decision functions. The application provides user with a web interface which can used to view video live streaming of drone during flood occurrence and help him/her to provide whereabouts by sending signals to the approaching drone during scouting mission. The application also provides user with emergency contact numbers to notify the authorities the conditions and necessary help required for the survivors during critical times. The application can be used to alert the population on the water presence of the flood and measure the damages occurred to building and structures present in the scouted area by linking pictures from the live stream to the admin site which processes the images and provides output of percentages of damage occurred in them.

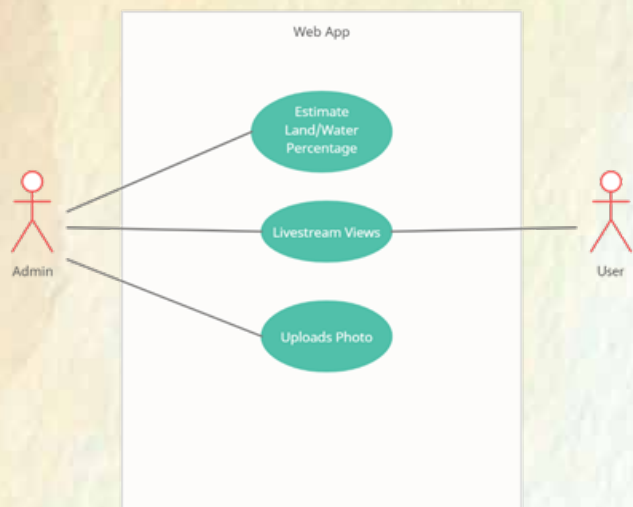
The proposed system provides the distressed population under flooding conditions the right amount of help to survive and successfully be rescued to a safer location in the right time. Using the system would be critical for authorities to save the survivors and provide relief to the personal and other property damages occurred in lesser amount of time by directing their efforts into effective direction.

The future work includes increasing drone mission duration via solar cell application and using thermal technology to detect survivors more effectively. Thermal cameras can detect human temperatures and help in finding human stuck in structures or between trees and shrubs. Adding the ability to process multiple images in a single instance can help in processing bulk images and calculating output for larger datasets.

## Architectural Diagram :

An architectural diagram is a graphical depiction of a user's possible interactions with a system. An architectural

diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. An architectural diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well.



The figure above depicts the architectural diagram of web app. The admin checks if the area in the image is filled with water or not. The user will be capable of performing the following tasks:

- Watch live stream using the interface.
- Login into the app using his credentials if he is an admin.
- Select photo to upload.
- Use ML processing to estimate land and water percentage.

### Outcomes Obtained :

- The drone will locate the people stuck in the flood through the camera module present in the drone which will be streamed to the web application.
- The web application also has a feature where rescue services to the people can be provided as fast as possible since the phone no's of the rescue department will be provided in the web application. So that we can prioritize rescue operations to the affected people.
- The web application also has a feature to predict the amount of damage caused to the certain region by implementing fully convolutional neural network (U-Net) model that automatically detects the flooded areas from the images captured from the drone through the video transmission i.e., the top view taken from the drone.

### Applications :

- In order to avoid big loses during a flood, both personal and material, it is necessary to take action for flood prevention, actions that are less costly and more efficient through the use of drones.
- This drone will identify the most affected people in flood situation and prioritize rescue operations to the affected people. There is an added advantage, as we include feature to alert nearby crews for rescue services.
- ML model will be used to detect the amount of damage occurred in the region through the images got from the live video transmission
- It can be used by people around the disaster affected area to prioritize evacuation and find possible routes to do so.

# REALITY

Wake up to reality! Nothing ever goes as planned in this accursed world. The longer you live, the more you realize that the only things that truly exist in this reality are merely pain, suffering and futility.

Listen, everywhere you look in this world, wherever there is light, there will always be shadows to be found as well. As long as there is a concept of victors, the vanquished will also exist.

The selfish intent of wanting to preserve peace, initiates war and hatred is born in order to protect love.



By **Aboobakkar Dhanish Vodeyar**  
6th SEM, M1 - Dept of ME

# AI BASED COVID-19 PATIENT MONITORING SYSTEM

By : Saloni Fiona Fernandes, Sharrel Ancita Castelino, Vinaya A Shetty, Divyashree V, Lavina Jean DSilva

## Abstract :

In today's world, Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered virus. There have been thousands of infections and deaths that have been caused by this disease. This pandemic has affected the living of all the human beings. It has severely affected the health of many. Today basically, there is no precise treatment for the ailment, and this calls for the need to prevent the disease from spreading.

As Covid-19 cases are increasing day by day it has been difficult for the health care staff to monitor the health of every patient. There is a high risk of the health care staff being infected too.

The proposed system uses different technologies like IoT, Machine Learning, Artificial Intelligence and concepts like facial expression recognition and voice conversion. The system makes use of CNN algorithm to classify the facial expression that has been captured. It makes use of Python inbuilt voice recognition and conversion module for speech to text conversion. It also makes use of sensors such as Temperature sensor and Pulse sensor to monitor the health status of the patient. The results of all the above mentioned modules are displayed on Web and Android application.

## Architectural diagram :

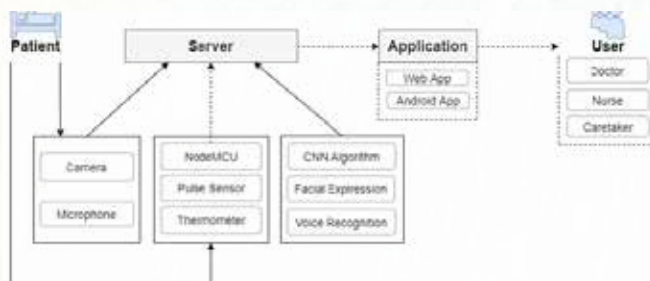


Figure 1: Architectural Diagram

The Figure 1 shows the Architecture Diagram of the proposed system. Here, the patient is kept under observation through the use of a camera and microphone. Sensors like Max 30102 Pulse oximeter sensor for pulse

rate and ds18b20 for temperature check of the patient which is connected to Node MCU. These sensor values are being sent to the database.

When a patient is in critical condition and cannot express himself, the health status of the patient could be predicted through the facial expression recognition concept. The system makes use of the CNN algorithm for Facial Expression Recognition. Here, the image of the patient is being captured through the camera and further, the face is detected from the captured image using the Haar Cascade algorithm, and image pre-processing steps like grayscale conversion etc. are done. The pre-processed image is compared with the dataset and classification is done and thereby predicting the emotion.

In this project, the FER-2013 dataset is being used. It has 28709 train images and 7178 test images. The images are of size 48\*48 pixels in grayscale. These images are being classified into 7 categories: 0-Angry, 1-Disgust, 2-Fear, 3-Happy, 4-Sad, 5-Surprise, 6-Neutral.

When a patient expresses himself through voice, the Voice to Text Conversion is performed. In this module, the voice of the patient is recorded through a microphone. The noise in the voice input such as a fan or A/C noise etc. is removed for further pre-processing. This pre-processed voice is then converted into text using the in-built Python library.

## Objectives :

- To reduce the risk of health-care staff from being infected to the virus.
- To monitor the Covid-19 infected patients without actually being in contact with them.
- To analyze the facial expression and voice of the infected person when one is admitted in the hospital.
- To read the sensor values such as temperature and pulse rate to continuously monitor the health of the patient.
- Live monitoring of the patient is enabled to keep a track on each of their activities.

### Obtained Outcome(s) :

- On completion of the proposed system, the facial expression recognition module gave an accuracy of 95%.
- The voice that was being detected was converted into text.
- The sensors that were used i.e., the pulse sensor and temperature sensor were fetching the values and displaying them continuously.
- The interface of the Android app where the classification of the facial expression, voice is converted into text, live monitoring of the patient, and the sensor values that are being fetched are displayed.

### Advantages :

- Useful to monitor the patients using remote health monitoring technology.
- Continuous monitoring of the patient's pulse rate and temperature.

- The data can be viewed at any time and at any place. It constantly fetches the sensor values from the patient and updates them in the database.
- The doctors and nurses will get an alert on phones if there is any variation in the patient's health condition.

### Applications :

- Facial expression recognition which classifies the emotions of the patient.
- Voice recognition which converts the voice of the patient into text.

### Future Scope :

- Translation of speech to different languages which is now restricted to English language.
- Currently the system monitors the activities of a single patient. In order to monitor multiple patients simultaneously, more number of IoT devices could be used.

## *Few moments with*

## **MR SHAWN RAYMOND ALISTER D'SOUZA**

Mr Shawn Raymond Alister D'Souza who is currently studying in second year CSE section C shares some of his experiences.

### **Q. Tell me about yourself**

A. My name is Shawn Raymond Alister DSouza. I'm a handicap. My legs and hands are weak. Writing, walking or any other work is difficult for me but I'm continuously trying to do it. I completed my high school studies in Kittel Memorial High School and PUC in Padua PU College.

### **Q. What is your motivation to take up Engineering?**

A. I want to become a Software Engineer. I have a lot of interest in computers. I felt engineering would be good for further education so I took up Computer Science Engineering.

### **Q. What were your challenges and how did you overcome them?**

A. I face a lot of difficulty in writing. It was very hard for me to type in a calculator for calculation during examination. I struggled to finish the exam on time especially during PU mathematics exam and now during EGD holding compass, protractor etc and drawing the circle becomes extremely difficult for me. These were the challenges I faced till now and I'm trying to overcome them by

continuously trying to make myself better.

### **Q. What are your future goals?**

A. To become a Software Engineer, to build my own house and also to become capable enough to do all the work which I'm not able to do right now or facing difficulty in doing currently.

### **Q. What is your experience with this transformation from offline to online education?**

A. My overall experience of this online education is not a good one because it becomes very difficult for me to understand some subjects and as a result I was not able to clear the exam.

### **Q. What made you opt for offline classes even though you had a choice?**

A. Understanding concepts during online classes was very difficult for me. So I chose to come for offline classes.

We wish him all the best for his future.

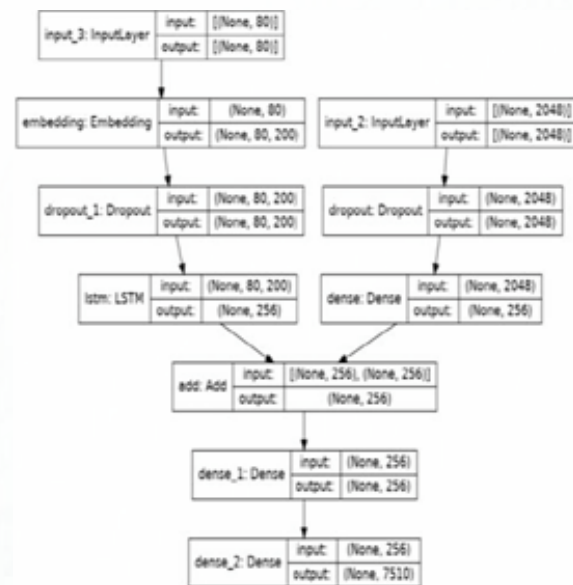
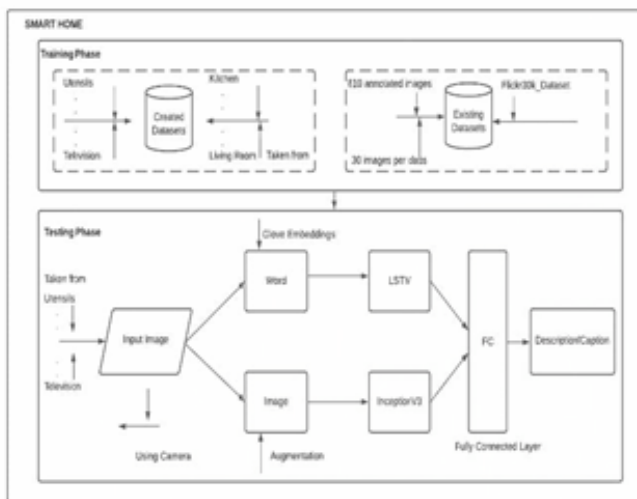


# AUTOMATED IMAGE CAPTION GENERATOR FOR VISUALLY IMPAIRED PEOPLE

By : Hazel Shefali John, Kavitha J Rao, Kavya U, Lavita Preethi Mathias, Dr Ashwin T S

**Problem Statement :** To design and develop a deep learning architecture to generate image descriptions in smart home scenario.

**Architectural Diagram :**



**Fig 1: a) Architectural Diagram b) Visual representation of the Final Model**

In our proposed research we have made use of the Flickr30k dataset, along with the dataset that we created considering the home scenario. The home dataset is augmented using the data augmentation techniques. The project is packed with deep learning neural networks; namely, Convolutional Neural Network (CNN) and Long Short-Term Memory (LSTM). CNN, is used as an image feature extraction algorithm for object detection. It creates features which are encoded into vector space, which is then given to the decoder. LSTM processes data passing on information as it propagates forward. The output from the two layers is then concatenated and fed into a Fully Connected (FC) Layer which ultimately generates a meaningful description for the given image. The caption generated is read aloud using Text-To-Speech thesis tools using Google Text to Speech Synthesizer where it is converted to audio using a computer-generated voice.

**Objectives of the Project :**

- Creating and benchmarking the dataset for image caption description generation.
- Propose a deep learning model for word embedding and caption generation.
- Propose an image classification model for image-to-text encoder.
- Propose a deep learning architecture for image description generation using word embeddings and image classifier.

**Obtained Outcomes :**

Results were good although some exceptions were observed. Common objects and regular scenarios were identified and captioned accurately however pictures with multiple objects or with rare, uncommon objects and complicated scenarios were misinterpreted by the model.



Fig 2: a) Image of a gas stove with different utensils on it  
 b) Image with a bed, a coffee table and a couch

In figure 2a, we can notice that all the objects in the image are identified accurately, and generated caption is well descriptive. But the image in figure 2b, has not been captioned accurately by the model. The image has a couch, a bed and lamp, a bedside table, and many more objects but the model was only able to identify the bed and the table correctly.

Overall bleu-4 score obtained using Greedy Search was 58.9 and using Beam Search was 61.3.

**Advantages :**

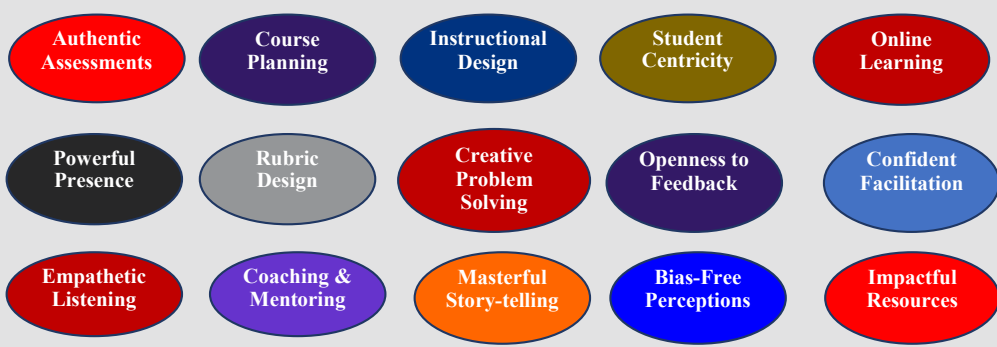
- Since most of the existing solutions focus on image

captioning in an open environment, we attempt to advance the state-of-the-art by combining the existing caption dataset with the created dataset confined to the home environment.

- The project aims at detecting and identifying various objects captured in an image, as well as the relationships between them.

**Conclusion :**

Developed model is successful in achieving comparable state-of-the-art performance and generates descriptive captions that can immensely improve the lives of visually impaired people in the home scenario.



**15 Skills faculty must have to teach for the future**



**Dr Sudheer M  
 Dean- R&D**

**SJEC  
Graduands - 2021**





IV year - A section - Computer Science & Engineering





IV year - B section - Computer Science & Engineering



IV year - A section - Electronics & Communications Engineering



IV year - B section - Electronics & Communications Engineering



IV year - Electrical & Electronics Engineering



IV year - M1 Batch - Mechanical Engineering



IV year - M2 Batch - Mechanical Engineering



IV year - M3 Batch - Mechanical Engineering



IV year - M4 Batch - Mechanical Engineering





IV year - Civil Engineering



Master of Business Administration

# Master of Computer Applications



Neeraj kumar



Abhijna D V



Aishwarya



Akhilesh K M



Ananya PJ



Anish B Naik



Augustin A



Deekshith Dinakar S



Deeshna M



Denson



Dhanush R M



Dhyanaja Alva A



Harshith Karkera



Josmy George



Kavya P R



Keerthan Rao



Lathesh K



Lawanya Shetty



M S Sharath



Manish B Karkera



Navya Narayanan



Nishmitha Salian



Nithin Jose M J



Prajwal Kumar D



Prathiksha Rai



Rachitha B S



Rahul B K



Rakshitha H N



Shriya Bhovi



Shwetha M.Shetty



Sushmitha Kotian



Sushmitha.P. Bolar



Swasthi Palai



Swathi G Rai



Thejas Karkera



Vijitha Vijitha



Abdulla Hassan



Ashwini



Prajwal Rao



Rawan Saleem Baji



Pavithra Kumar



Nikhitha Gatty



Pragathi Manjeshwar



Kaveri Gouda



Nidhin Wilson



Sanjana Kotian



Shравan Shet



Ravichandra S  
Poojara

*Farewell*

to

**Rev. Fr Joseph A. Cardoza**

Campus Counsellor



You have served SJEC with gladness - tirelessly,  
faithfully and with compassion.

Now as you move on to the next chapter in your life,  
May God continue to richly bless you and watch over you.

All the best dear father.



**Management, Staff & Students**  
**St Joseph Engineering College**

An Autonomous Institution  
Vamanjoor, Mangaluru

# OBITUARY



**ASHRITHA SALDANHA**

Computer Science & Engineering

29-12-1996 — 11-9-2020



**Jaison K G**

Civil Engineering

04-01-2000 — 13-9-2020



*Death brings pain that time can only heal,  
No words could ease what we truly feel;  
But with God, your joy is eternally sealed,  
And we cherish the memories that death can't even steal.*



**Management, Staff & Students  
St Joseph Engineering College**

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Vamanjoor, Mangaluru

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