



MAGAZINE OF

Mechatronics

ENGINEERING DEPARTMENT



ENGINEERS TURN DREAM INTO REALITY

- HAYAO MIYAZAKI

EDITORIAL

It gives me great pleasure to know that students of the Department of Mechatronics Engineering have brought out this colourful magazine. This has evolved to be a beautiful blend of innovative and creative thinking and a dazzling display of both technical and artistic skills.

The magazine 'ECHO' will be an avenue for the students and faculty to echo their voices and views about the happenings and developments in the technological realm. Sir Albert Einstein said, 'Creativity is intelligence having fun!'. I wish that this magazine will serve as the perfect platform to bring out the innate and latent talents and skills of our students and to hone them.

I congratulate the Editorial team for their stupendous and fantastic efforts in designing the magazine and collating all the articles. I thank all the contributors for having taken time to send in their works.

Here's wishing the Editorial team a great success to keep up this good work!

Happy Reading!

Dr. M. Lydia
Professor & Head
Department of Mechatronics Engineering



FACULTY EDITOR:

Mr. Madhankumar S, Asst.Prof.,MCT

STUDENT EDITORS:

2018 - 22 BATCH

Saktheeswaran G
Prawin Sankar T A
Rishikesh S S

2020 - 24 BATCH

Deepak K V
Sooraj S

2019 - 23 BATCH

Bero C
Asif Muhammed A
Keshav B
Kishore P

SYNOPSIS:

- ✦ KRIZEN' 21
- ✦ DEPARTMENT LEVEL EVENTS
- ✦ EXPLORE THE TECH
- ✦ SPIRIT LIFE UNLEASHED
- ✦ A STORY WITHOUT LETTERS - ART
- ✦ THOUGHT MANIACS
- ✦ THINK! DO! TREAT!
- ✦ ACHIEVEMENTS
- ✦ UPCOMING EVENTS

**“SCIENTISTS DREAM ABOUT DOING GREAT THINGS.
ENGINEERS DO THEM”.**

- JAMES A. MICHENER

KRIZEN'21 is a National Level Symposium, a 'Spree of Extravaganza held on 15th September 2021, virtually. 12 Technical events, 6 Cultural events, and 2 Workshops were conducted on this occasion. The entrants combatively took the challenges. Around 5000 opulent participants played their part in a rapture manner to make it a phenomenal success.

TECHNICAL EVENTS:

The technical events were categorized into four domains;

Portrayal - The motto of this domain is to improve the soft skills of individual participants. To inculcate the hunt of knowledge in the entrants' minds and to provoke it through the mode of this presentation. The events under this domain were Project Presentation - to provoke the project building techniques, Paper Presentation - to enhance their creative knowledge towards the technical aspects, Interviewind - a setup of the interview to test their soft skills.

Instrumentation - The aim was to bring out the esteemed minds of future engineers in the field of Mechanical engineering. The events under this domain were CadFest - which examined the drafting skills of the participants, Mechaniquiz - a web of questions were given to the participants. The participants were tested with their thinking and imaginary skills under the domain of Mechanical Engineering.

Cryptanalysis - The participants can improve their coding skills in a competitive way through "LogiCode, FlashCode, CodeOClue and Web/App Development". In these events, the knowledge, speed, accuracy, and confidence level of the participants were tested.

Electrova - It is a collage of electrical events namely, ElectricQuiz, ElectroLoop, and CircuitTrack, in which the participants are lightened up by their knowledge in the branch of electrical and electronics. This event confronts the attendees' circuit reading and analyzing skills, within a limited time.



CULTURAL EVENTS:

The cultural events comprise of 6 interesting and challenging events, SoulSteps, Rhythm, Fotohunt, BeyondInks, MemeCraft, and VideoVisions. These events were completely skill-based events for every individual participant. The participants showcased their skills in drawing, singing, dancing, meme - creating, mobile photography, and video editing. The participants were highly tested on their skills and are encouraged for their creative aspect, sharpening their senses through keen observation of the environment.

WORKSHOPS:

A plenary was set to give an introduction and mid-level knowledge under the concepts of the Internet of Things (IoT) and 3D Printing, by resource persons Mr. A. Mughil, IoT division, Zoho and Mr. T. Metha, Technojinn solutions, respectively. The IoT Workshop covered topics like Data Acquisition, Processing, and Management, Data Visualization, Analytics, and Business Software Integration. In 3D Printing, the entrants were acknowledged about the Foundation of 3D Printing, and Reverse Engineering. The partakers were magnificent under their domain of learning so it made the sessions more live in virtual mode.



ENTREPRENEURSHIP FOR SUCCESSFUL START-UPS

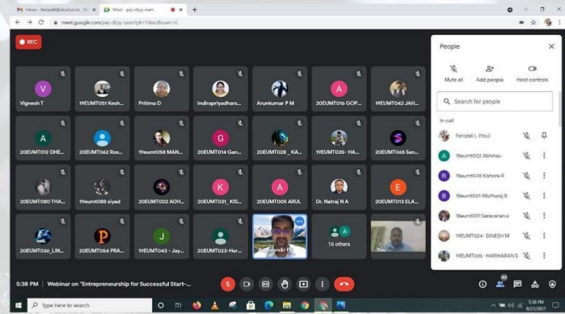
SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY
 (AN AUTONOMOUS INSTITUTION)
 ACCREDITED BY SWAJEE
 Kuvempur, Coimbatore

INSTITUTION'S INNOVATION COUNCIL
 (Approved by AICTE)

DEPARTMENT OF MECHATRONICS ENGINEERING
 Inviting you all to join a webinar on
Entrepreneurship for "Successful Start-ups"

Speaker:
 Mr. P. G. Ragavendir,
 Founder & CEO,
 BGENT,
 Vellore.

<https://meet.google.com/pej-dtpy-cum>
 21.08.2021
 @ 5.30 PM



A Webinar was organized on "Entrepreneurship for Successful Start-Ups" on 21.08.2021 by Mr. P. G. Ragavindir, Founder & CEO, BGENT Vellore. The expert discussed how to start a successful business; how to create innovative ideas; and Areas of green revolution towards future generation living. He was interested in a collaborative project with our students for an innovative idea.

DEEP VISION TECH AI INTERNSHIP SEMINAR

Expertise
 Relevant Technical and Professional Expertise

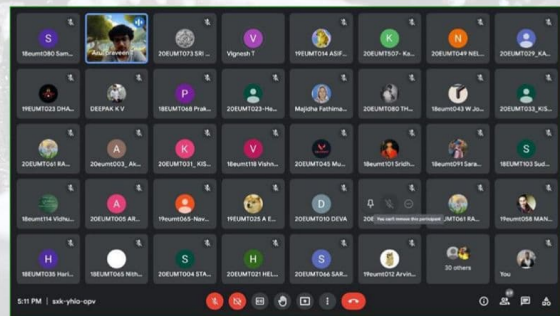
- Must have experience of programming in Python, MATLAB, Javascript, C#
- Must have experience in building Deep learning architectures using TensorFlow, Keras, PyTorch
- Experience in Computer Vision / OCR or Natural Language Understanding (NLU) or Conversational AI/Chatbot Development
- Experience in Cloud computing using Google Cloud, AWS, Azure
- Experience with Image & Video processing techniques
- Experience in ML algorithms
- Excellent Problem Solving, Analytical and Decision Making skills

Required Project Experience

- Must have successfully completed at least 1 project of ML, DL, NLP and be able to demonstrate the same

Preferred Expertise

- Good verbal and written communication skills
- Highly organized, self-motivated, initiative driven and time optimization
- Ability to work independently on projects, analyze situation or data written/dictated procedures to demonstrate solutions



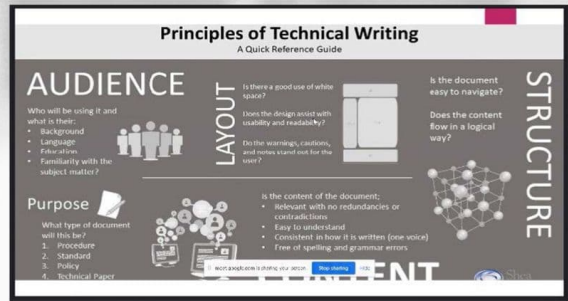
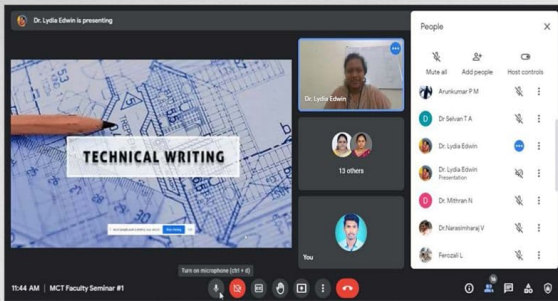
A Webinar was organized on "Deep vision Tech AI Internship" on 17.08.2021. Mr. Jeyasudan Munsamy, Founder & CEO, Deep vision Tech AI was the resource person of the session. The expert discussed about the company profile, Ongoing Projects, Role for which the students are hired, Knowledge needed for the projects, Future scope, what they will learn from the intern, and further Job opportunities.

ALUMNI INTERACTION

INTERACT WITH MECHIE
 VINOIH NAGARAJAN

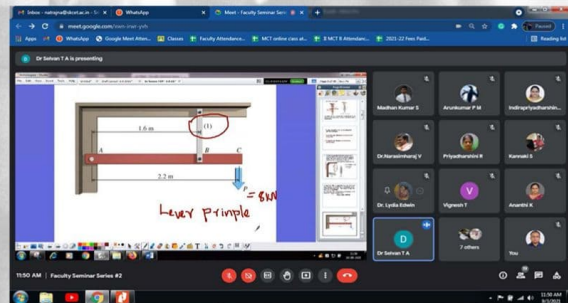
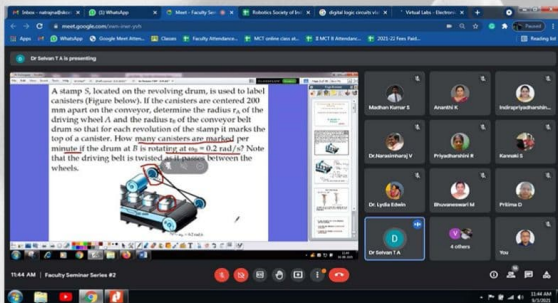
Our Department organized an Alumni Interaction session under the topic "How to crack placement" by Mr. Vinodh Nagarajan, Valeo India Pvt Ltd, Chennai on 24.07.2021. The discussion points were Resume writing, How to face an interview and SWOT analysis.

FACULTY SEMINAR SERIES #1



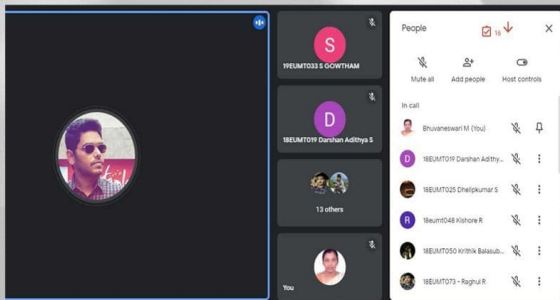
Our Department has Initiated the Faculty Seminar Series as a knowledge-sharing session for the benefit of the faculty members. It started with the topic on #1 The Art of Technical Writing. The Resource person was Dr. M. Lydia, HOD/MCT. The Session Highlights were: When, Where, Why and How - Writing Research Proposals; Principles of Technical Writing; 5 Essential Elements of Project Proposal; and Discussion on Sample Project proposal.

FACULTY SEMINAR SERIES #2



Dr. T. A. Selvan, Professor, MCT has shared his views on the topic #2 Enlightenment of essential strategies in core subjects.

ALUMNI INTERACTION



An Alumni interaction session was organized for MCT third and final year students. Mr. Sakthi, IT Analyst, TCS, Bangalore. He motivated the students by providing important information about upcoming placement drives. During the alumni interaction, the following topics were discussed:

- Resume writing skills
- How to prepare for an interview?
- What are the candidate's roles and responsibilities for the interview?



AR-Guided Surgery Augmedics XVision

- Mr.P.M.Arunkumar, AP/MCT

It all started when Augmedix CEO Nissan Elimelech got a superhero inspired idea:

Wouldn't it be cool if surgeons had X-ray vision?

Several years of R&D produced the next best thing: XVision, a headset that uses augmented reality to turn a patient's CT scan into a 3D Visualization that helps guide a spinal surgeon through operations in which every millimeter counts. The headset superimposes a 3D image of a patient's spine over their body, allowing surgeons to (almost) see what's under the skin without ever looking away from the operating table.

What is Edge computing and why does it matter?

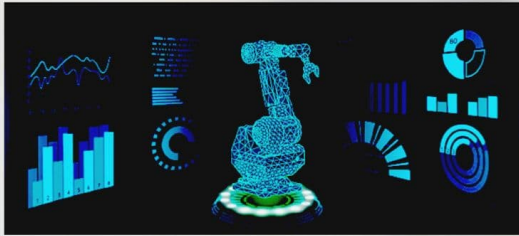
**- Kishoor H S
(2020 - 24 Batch)**



At its basic level, edge computing brings computation and data storage closer to the devices where it's being gathered, rather than relying on a central location that can be thousands of miles away. This is done so that data, especially real-time data, does not suffer latency issues that can affect an application's performance. In addition, companies can save money by having the processing done locally, reducing the amount of data that needs to be processed in a centralized or cloud-based location. Edge computing was developed due to the exponential growth of IoT devices, which connect to the internet for either receiving information from the cloud or delivering data back to the cloud, and many IoT devices generate enormous amounts of data during the course of their operations.

Edge computing and 5G

Around the world, carriers are deploying 5G wireless technologies, which promise the benefits of high bandwidth and low latency for applications, enabling companies to go from a garden hose to a firehose with their data bandwidth. Instead of just offering faster speeds and telling companies to continue processing data in the cloud, many carriers are working edge-computing strategies into their 5G deployments in order to offer faster real-time processing, especially for mobile devices, connected cars, and self-driving cars.



Epicenter of Industry 4.0

**- Prawin Sankar T A
(2018 - 22 Batch)**

Industry 4.0 refers to a new phase in the industrial revolution highly focused on interconnectivity, automation systems, ML and DL networks, and real-time data collaboration with physical production. But there is one particular technology under development clustering all of these technologies. And that is Digital Twin.

A digital twin is a digital representation of a physical object, processes or services and operations with smart digital technology to create a more holistic and better connected ecosystem for industrial applications. In simple terms, this just means creating a highly complex virtual model that is the exact counterpart (or twin) of a physical thing. The 'thing' could be a bike, a building, a bridge, or a jet engine. Connected sensors on the physical asset collect data that can be mapped onto the virtual model.

Even though Digital Twin has many possible potential, there are still some challenges remaining in the areas of implementation pertaining to existing infrastructure of industries. Instrumentation of the physical system with sensors, collection and management of humongous amounts of data are some of the challenges being dealt with.

Smart 3-D Printing:

- ARVIND K V (2019 - 23 Batch)

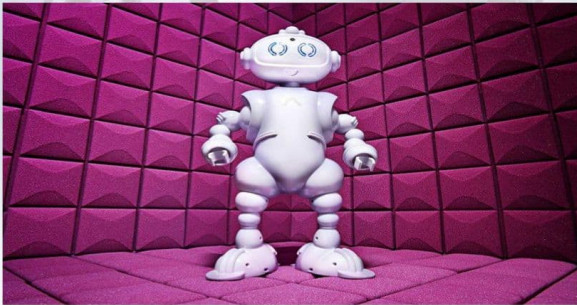
The Process of Smart 3D printing involves creating objects by vertically overlapping layers created from a specific plastic filament. Using a 3D modulation program, the software divides the graphic into extra-thin layers, superimposing one on top of the other to finally create the part in three dimensions.

The main function of the smart 3D printer is to convert the plastic filament from a solid to a liquid state. Once converted, the printer is responsible for converting it back into a solid-state giving it the shape that we have previously designed. This process can be repeated as many times as desired because these materials are completely recyclable.

Smart 3D-printed Materials is dedicated to designing, developing, and manufacturing 3D printing filaments. Founded in 2014, Smart Materials 3D was born with the main idea of providing innovative solutions to the 3D printing market by creating plastic filaments for 3D printers, used both for the business sector and for individuals.

As 3D printing has matured, it has helped meet needs in the medical industry for things such as on-demand medical samples, personalized prosthetics, and even bioengineered organ printing. Smart 3D printing has the potential to make manufacturing viable in any region or economic climate, rather than only in the manufacturing hubs of the past 30-40 years.

A High-Tech Tutor - Van Robotics ABii



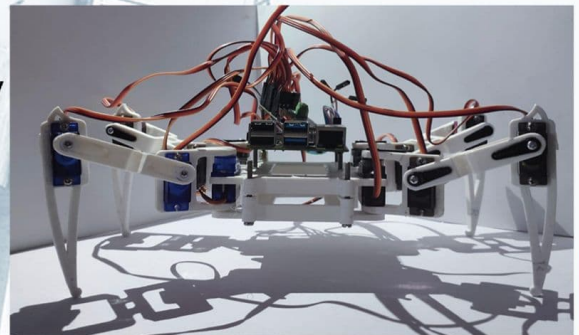
Robots fascinate Van Robotics CEO Laura Boccanfuso. But while getting her Ph.D. in computer science, she felt most were too expensive and technical for real-life applications. So she developed ABii, a robot tutor aimed at closing the math and reading proficiency gap for K-5 students. This is no mere toy: the 16-by-8-in. The device is designed to work with teachers

and, increasingly, parents now that so many children are learning from home with a curriculum created by certified educators. Its edge: using a camera to detect changes in student attention and optimizing its tutoring approach to resonate with individual learners. "Schools more than ever need individualized learning help," Boccanfuso says. "They don't have enough teachers in the classroom."

- Mr.P.M.Arunkumar, AP/MCT

Voice automated spider crawling Robot

Voice automated spider crawling Robot which is fully 3d printed and also live stream what it's seeing so that it is mostly used in Archeology department, and many others too even it's gesture-controlled and also the app associated with it. It has add-ons and shields so that it can get more features. it's even used for spying purposes also. It can able to perform VSLAM for indoor mapping. It runs with deep learning algorithms for IPS (Indoor Positioning System).



- Neelesh kannan (2019 - 23 Batch)

The Future of Farming - FarmWise Titan FT-35



Titan FT-35 is a weed-destroying robot, weighing in at about 3 tons. It is a driverless tractor that uses machine learning and computer vision, rather than herbicides, to eradicate weeds from farmers' fields. Traveling along a conventional tractor's path, the machine identifies both the planted crop (broccoli, lettuce, cauliflower, and tomatoes), and the weeds disturbing its growth. In an instant, it reaches for the weed within 1 cm of precision and pulls it. Ten FT-35s are currently deployed in California and Arizona.

- Mr.P.M.Arunkumar, AP/MCT

CHARACTER

Why character? What character? On its face, “character” is a morally neutral term. Every person, from politician Hitler and saints like Mother Teresa, have a character. We use the term character to describe a person’s most prominent attributes individuals’ nature.

It is truly said:

“When wealth is lost, nothing is lost.
When health is lost, something is lost.
But when a character is lost, everything is lost.”

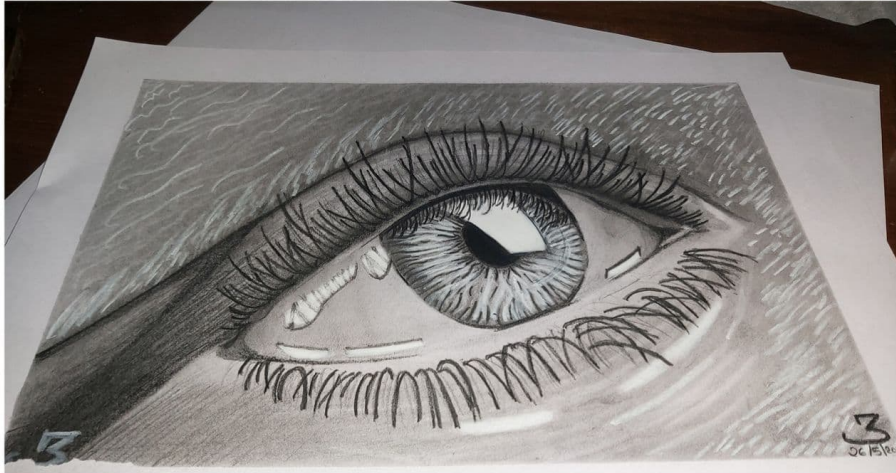
No one is born with good character; it’s not a hereditary trait, and it isn’t determined by a single noble act. Character is established by conscientious adherence to moral values. Another way of saying that is, the character is ethics in action. Thus, the character is both formed and revealed by how one deals with everyday situations as well as extraordinary pressures and temptations. Like a well-made tower, a character is built stone by stone, decision by decision. A good character can be cultivated by forming good habits in childhood. “Sow an act and you reap a habit. Sow a habit and you reap a character”. If we sow good habits, we build up a good character.

A man of good character should love to be out even-handed justice to all. But justice should be tempered with mercy. If it is our duty, to be frank, we ought to be sweet and courteous. Sincerity, honesty, generosity, and purity in speech, thought and action- such virtues entitle a person to be called a man of good character.

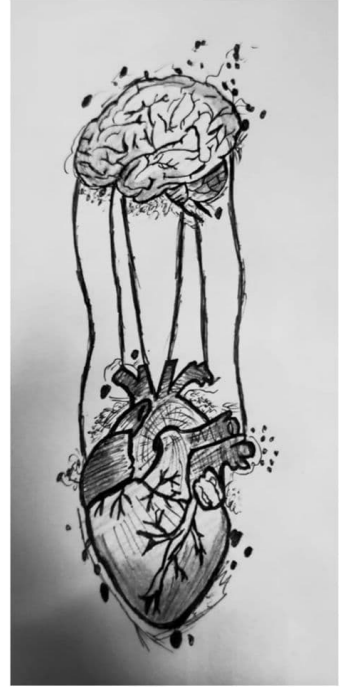
There can be a person who might easily get influenced by the opinion of other people while there would be one who would hold on to his own opinion. The one will be called as a man of weak will while the other of a strong will. Will power is a very important factor in determining character. In this way, it is based on one’s character that a man would be judged character reflects the man and man are reflected in the character.

Generally, all these qualities are not found in a man’s character at a specific point in time. Good characteristics imbibed over time make a person have a constructive mindset. Everything is interlinked closely in this world. That is why he has to continue to build up his character lifelong, and this way even a man-on-the-street can turn to be a great man in the future. Good habits define the character of a person which makes him go far in life. But even then the task of building up a character does not come to an end.

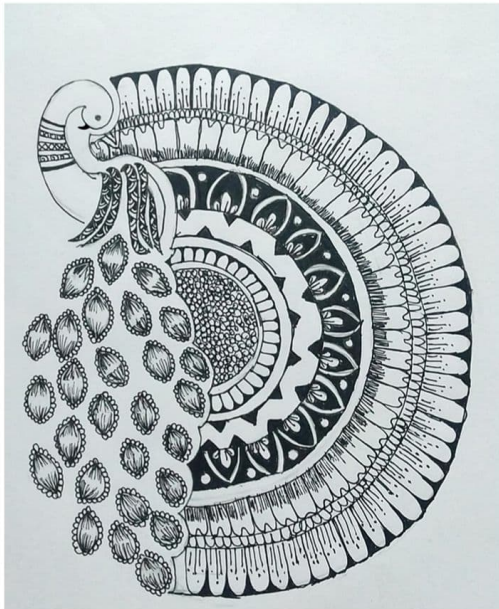
- Gokul Krishna K S
(2019 - 23 Batch)



- Barath B
(2019 - 23 Batch)



- Adhira M
(2019 - 23 Batch)



Mrs. Indirapriyadharshini J
AP/MCT



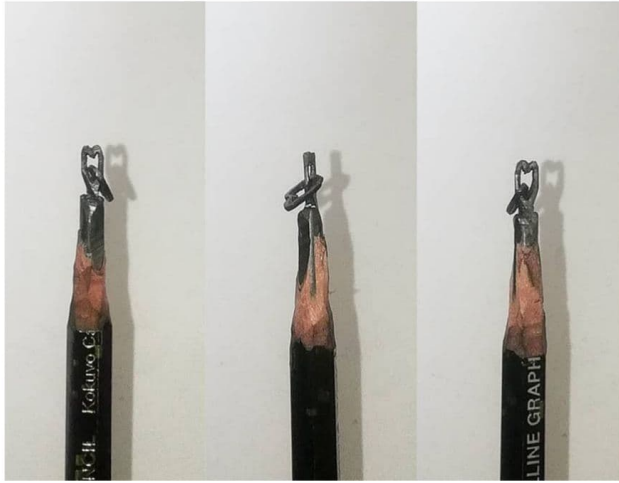
- Dheeraj A
(2020 - 24 Batch)



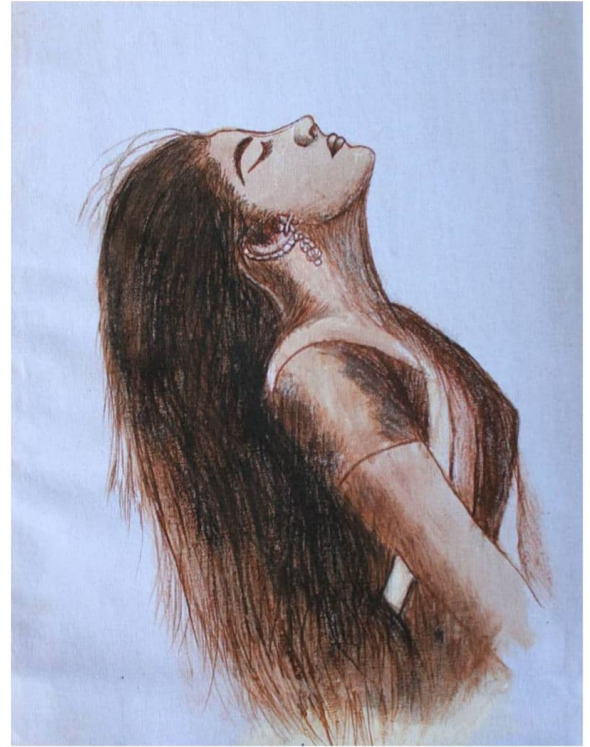
- Sri Hari P
(2020 - 24 Batch)



- Medhun Krishnaa A
(2019 - 23 Batch)



- Prakash S
(2018 - 22 Batch)



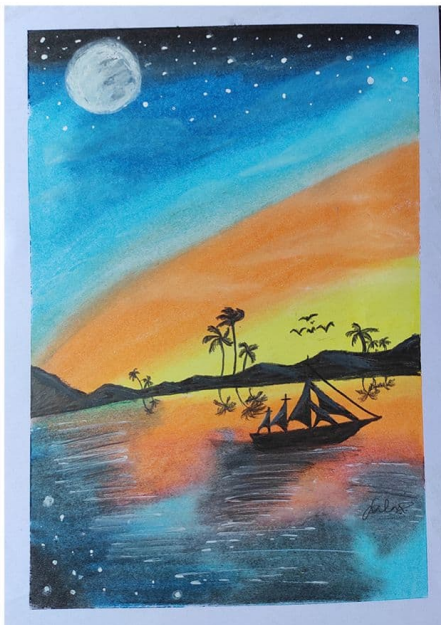
- Vishnu Girish Kumar
(2018 - 22 Batch)



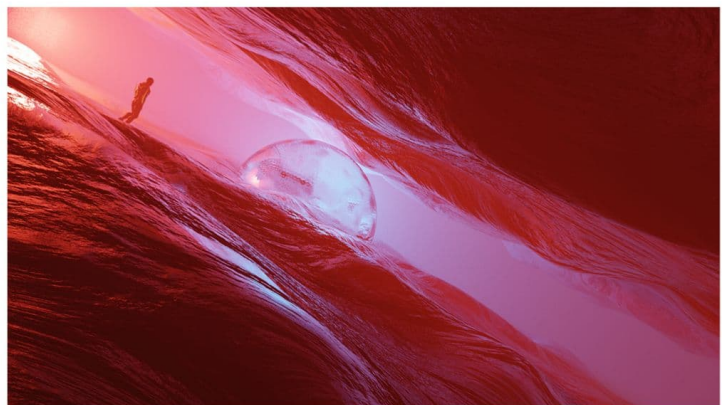
- Mr. Muthukrishan G
(Alumni 2013-17)



- Mukesh P
(2018 - 22 Batch)



- Akilan S (2019 - 23 Batch)



- Gedendhar S
(2019 - 23 Batch)

10 AMAZING FACTS OF COIMBATORE :

- 1) Our National Anthem was sung first.
- 2) The Sweetest Water in Siruvani river.
- 3) Educational Hub of Tamil Nadu.
- 4) 4th Best Cosmopolitan from South India.
- 5) The Hardware Capital of Tamil Nadu.
- 6) GD Naidu Car Museum.
- 7) Coimbatore has an average literacy rate of 89.23%, higher than the National average of 74.04%.
- 8) Manchester of South India.
- 9) Kongu Tamizh Language.
- 10) Narain Karthikeyan, ace racing driver is from Coimbatore.



- Mrs. Ananthi K, AP/MCT

FIND THE ROBOT :



RIBA II

- Mr. Vignesh T, AP/MCT

ONE BULB THREE SWITCH PUZZLE:

There are 3 switches in a room, where one of them is assigned for a bulb in the next room. You can't see whether the bulb is on or off, until you leave the room. Find the minimum number of times you have to go into the room to identify which switch corresponds to the bulb in the other room.

Answer:

The person has to initially turn on the first switch and keep it on for 2-3 minutes. Next, turn off the first switch and turn on the second one. Rush to the other room as soon as you turn on the second switch.

If the bulb is glowing, the second switch corresponds to the light bulb; however, if the bulb doesn't glow, but touching it feels warm, the first switch is the one that turns the bulb on. If it's neither lit, nor warm, then the third switch is the desired switch. So, a person must go only once to the other room to find out the accurate switch.

பறவையின் எச்சமாய் விழுந்து விதையாகி,
மண்ணில் முளைத்து செடியாகி,
மழையில் நனைந்து மலராகி,
தும்பியின் காலில் காயாகி,
காலப்போக்கில் கனியாகி,
மண்ணில் விழுந்து புதை-படிவமாகி,
வண்டியில் எண்ணெயாய் எறிந்து புகையாகி,
காற்றில் கழந்து காணாமல் போகிறது மரம்.

- ஆசிப் முகம்மது. அ
(2019-23 Batch)

காற்றை பிழந்து வேறு பரிமாணம் செல்ல,
சாலையைத் தாண்டி சிகரம் எட்ட,
வானைக் கடந்து விண்வெளி அடைய,
வாழும்போதே சொர்க்கம் காண, வழியாகிறது என்
இருசக்கர வாகனம்.

- கிஷோர். ப
(2019-23 Batch)

கடற்கரை மண்ணில் எழுத்துகள் போல்,
மழையில் நனையும் பஞ்சுமிட்டாய் போல்,
அடுப்பில் வைத்த வெண்ணெய் போல்,
சட்டென கரைந்து விடும், நிலையில்லா காலம்!

கல்லறையில் பதித்த சொற்களைப் போல்,
நெல்லையப்பர் தேரின் அச்சாணி போல்,
மலையைக் குடையும் உளிகளைப் போல்,
என்றும் மறையாது, என் அழிவில்லா கவிதை!!

- புவனேஷ். பா
(2019-23 Batch)

என் கிணறு வற்றிப்போனதை விடவும் வருத்தம் தந்தது
யார் யாரோ எங்கிருந்தோ
என் கிணற்றை
வற்ற வைத்துவிட முடியும் என்று

- தீர்த்தனா த
(2018 - 22 Batch)

இந்தக் கண்ணீர்
தனக்காகவே அழுகிறது!
அழகான இடத்தை
விட்டுவிட்டு வந்ததற்காக

- சக்தீஸ்வரன். கோ
(2018 - 22 Batch)

பார்த்தவுடன் சிரிக்காதே!
சிரித்தவுடன் பழகாதே !
பழகியவுடன் பிரியாதே!
பிரிந்தபின் வருந்தாதே !

-நித்யா பிரியா சீ, AP/MCT

you'd be hated; you'd be loved;
you'd live long enough to see your clones
with indifferent set of muscles, blood
and bones

and you'd be eternal /

-Jeffry S
(2019 - 23 Batch)

Five Rules of Happiness:

Don't Worry
Don't Hate
Give More
Expect Less
Live Simply

- Mrs. Kannaki S AP/MCT

Teaching is an art and a science. Teacher is an artist, whereby he or she creates interest and motivation among the learners. Teaching is a science and an unparalleled profession, whereby the students are moulded from novice to experts with reference to the knowledge, attitude and skill. Teachers can change lives with just the right mix of chalk and challenges. One day with a great teacher counts better than a thousand days of diligent study. Education is the modification and optimization of one's personality. It is evident that the teacher has the pivotal role in moulding, reshaping and sharpening the personality traits of an individual student.

- Vishnu Girish Kumar
(2018 - 22 Batch)

இரவு நாய் போல
விடாமல்
ஊளையிடுகிறது
மனது
இரவல் தந்த
வாழ்வுக்கான
விடியல்
எப்போது வருமென்று...
ஆசைப்படும்
மனது
தடுமாறும்
தடம் மாறும்.
ஆனால்
ஆசையின்
ஆன்மா மட்டும்
அடங்குவதுமில்லை
முடிவதுமில்லை.....

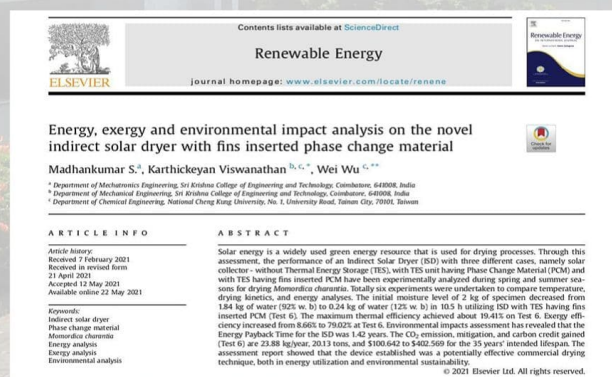
-நெல்லையப்பன் பா
(2020 - 24 Batch)

Tamil Nadu State Roller Skating Championship

Brain Thug 2021



JOURNAL PUBLICATION



Mr. S. Madhankumar, AP/MCT Engineering has published a research paper entitled “Energy, exergy and environmental impact analysis on the novel indirect solar dryer with fins inserted phase change material” in the Renewable Energy journal by Elsevier publication, Volume 176, 2021, and Pages 280-297. The journal has an impact factor of 8.001. It is a SCI and Scopus indexed publication.

EVENT 1:

The poster for the 'Hackathon: AI For Social Good' event features a dark blue background with white and light blue text. At the top, it lists sponsors: DeepVisionTech.AI, DEPT. OF MECHATRONICS ENGINEERING, and SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY. The main title is 'Hackathon: AI For Social Good' with two topics: 'TOPIC 1: 3D Motion Capture from 2D Videos' and 'TOPIC 2: Chatbot with Customizable Voice'. A central graphic shows a wireframe head connected to a computer monitor and keyboard. Below the title, a call to action says 'Call For Brilliant Minds to Collaborate'. A list of details includes dates (23rd to 30th Sept, 2021), a registration deadline (18th Sept, 2021), eligibility (all departments, max 5 per team), prizes (Rs.30K & Internship), and a registration link. Logos for NVIDIA, INCEPTION PROGRAM, ORACLE for Startups, iit-b, and STPI are at the bottom, along with contact information.

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DEPT. OF MECHATRONICS ENGINEERING
SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY
An Autonomous Institution, Accredited by MAAC with 'A' Grade

Hackathon: AI For Social Good
TOPIC 1: 3D Motion Capture from 2D Videos
TOPIC 2: Chatbot with Customizable Voice

Call For Brilliant Minds to Collaborate

Hackathon Dates: 23rd to 30th Sept, 2021

Deadline to Register: 18th Sept, 2021

Open to all Departments & Max. 5 per Team

Winning Teams get total Rs.30K & Internship

For more Details & to Register Team, visit:
DeepVisionTech.AI/hackathonSep21.html

DeepVisionTech is Associated with:
NVIDIA INCEPTION PROGRAM ORACLE for Startups iit-b STPI

Contact Us: DeepVisionTech.AI | Recruitment@DeepVisionTech.AI | +91 91593 23424

EVENT 2:

FACULTY SEMINAR SERIES #3

HOW TO WRITE A SUCCESSFUL RESEARCH MANUSCRIPT

- Writing a scientific manuscript is an endeavour that challenges the best minds, yet it is very rewarding once the body of work comes to fruition.

By Mr. MADHANKUMAR S, AP/MCT

TIME AND DATE: 17-SEP-2021, 11.40 AM TO 12.30 PM (IST)

G-MEET CODE: jks-yfqz-knt

EVENT 3:

FACULTY SEMINAR SERIES #3

INTERNET OF THINGS: USE CASE

- Keeping assets up and running has the potential to significantly decrease operational expenditures, saving companies millions of dollars.

By Mrs. ANANTHI K, AP/MCT

TIME AND DATE: 12-OCT-2021, 11.40 AM TO 12.30 PM (IST)

G-MEET CODE: pva-yjay-aug