KARPAGAM
COLLEGE OF ENGINEERING

Rediscover | Refine | Redefine

Accredited by NAAC with 'A+' grade

Autonomous | Affiliated to Anna University

(An ISO 9001:2015 and ISO 14001:2015 Certified Institution)

AY 2023-24

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ABOUT KCE

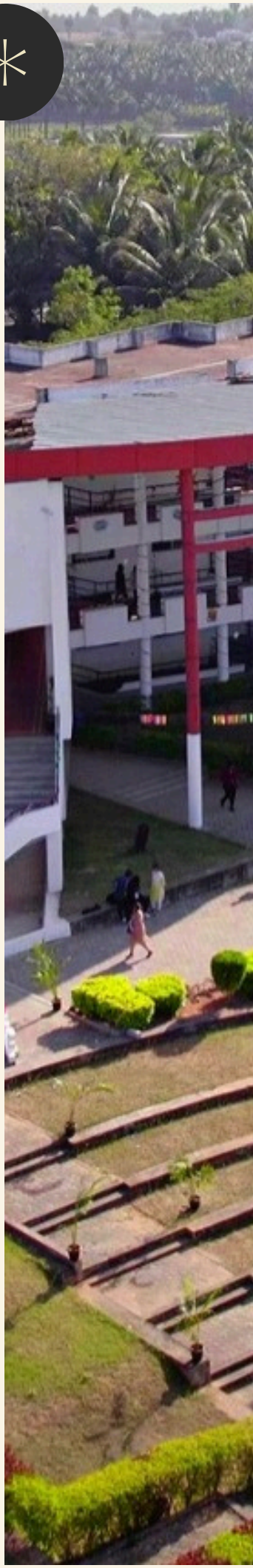
The Karpagam College of Engineering, established in the Year 2000, is an Autonomous institution, Approved by AICTE, NewDelhi and Affiliated to Anna University, Chennai. The college offers various Under Graduate and Post Graduate Engineering programmes. The College is accredited by NAAC with 'A' Grade, TCS and Wipro with 4500 students and 426 teaching and non-teaching staff members, Karpagam College of Engineering strives to impart quality education and an excellent career start to all its students. The Placement and Training facilities add a feather to its cap ensuring the students get placed on campus. The 10 Centers of Excellence strive to impart practical and experimental exposure to the students and serve as a window to the corporate world. The College is situated at Myleripalayam, 15kms from Coimbatore Central Railway station. The serene location surrounded by green fields and rich clusters of coconut groves creates a calm atmosphere conducive to learning and growth. Infrastructure with well-equipped laboratories and libraries, well maintained Play grounds, Hostels, Food Court, Gymnasium and an Indoor Stadium.

VISION

To become one of the best institutions at the National and International level by incorporating innovative teaching - learning methods to enable the students to secure a high-value career, motivate to pursue higher education and research to serve the society.

MISSION

To bring out knowledgeable engineers and professionals in their field of specialization by having qualified and trained faculty members and staff besides necessary infrastructure and to create highly conducive teaching and learning environment . To work in close association with stakeholders by way of enhanced industry – institute interaction, to take up need based research and industry specific programmes. To organize co-curricular and extracurricular activities for character and personality development to produce highly competent and motivated engineers and professionals to serve and lead the society.



ABOUT DEPARTMENT OF ECE

The embryonic formation of the Department of Electronics and Communication Engineering was in the year 2000 with the introduction of an undergraduate course. The Department has been accredited by the National Board of Accreditation (NBA) and affiliated to Anna University, Chennai. The Department over the time has grown in several dimensions and provides a magnetic ambience in teaching and learning. Apart from four years B.E course, the Department also offers two full time M.E courses (VLSI Design and Communication Systems) and Anna University approved Ph.D Research Centre to expand the scope of research focus of the department Students pursuing B.E in ECE have a full and flexible undergraduate curriculum. Numerous streams can be tailored to fit every individual's interests, skills and career goals. ECE has gained a reputation for producing top-notch engineers for industry and academia. Postgraduate study in ECE prepares students for leadership roles in research, development and design positions that require skill and imaginative engineering solutions. The major areas of faculty expertise of the department include Biomedical Signal Processing, Communication Systems, Computer networks, Control Systems, Digital Signal Processing, Image Processing, Instrumentation, RF and Microwaves, Microstrip Antennas, Optoelectronic and Optical Communication, VLSI Design, Wireless Communication, Embedded Systems and MEMS. The Department has Centers of Excellence in the field of VLSI Design, Embedded Systems, Communication and Networks and Signal Processing. The Department has signed MoUs with leading industries and organizations for establishing collaborative research, conducting Workshops, Seminars and for organizing International Conferences. Professional associations such as ECE association and IEEE student chapter are developed for professional interaction

VISION

To provide innovative teaching and learning methodologies for excelling in a highvalue career, higher education and research to the students in the field of Electronics and Communication Engineering to meet the needs of the industry and to be a part of the advancing technological revolution.

MISSION

To create engineers of high quality on par with international standards by providing excellent infrastructure and well qualified faculty. To enhance the collaborative and multidisciplinary activities to develop human and intellectual qualities. To provide technical expertise to carry out research and development.

EDITORIAL TEAM

DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY EDITORS

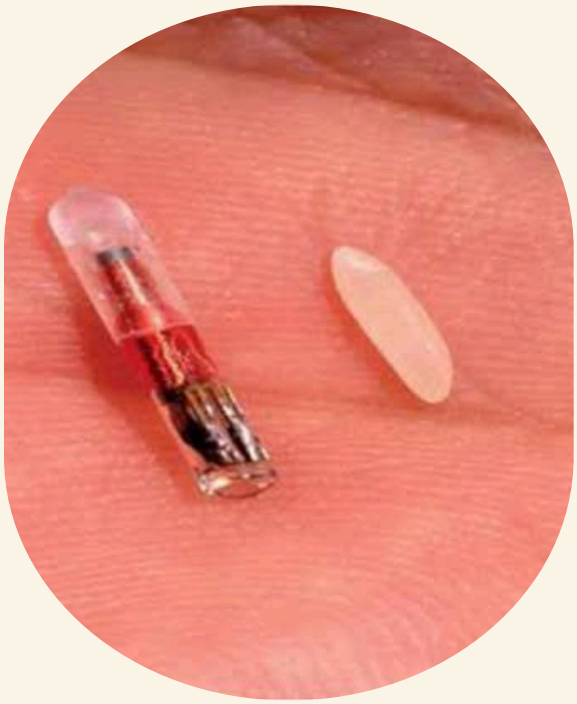
Dr. G. ARUN FRANCIS, AP/EC
Mr. C. MUKUNTHARAJ, AP/EC
Dr. R. SELVAKUMAR, AP/EC

STUDENT EDITORS

20L141 RAHUL SANJAY R
20L241 RAJAGURU S
21L126 KISHORE S
21L122 KARTHICK RAJA R
22L329 NAVIN Y
22L350 SIRAN P

TECHNOLOGY AND INNOVATION

Articles on new technological advancements and their implications and reviews of the latest gadgets, apps, and software useful for students.



ARTICLE

BRAINWAVES TO BYTES:THE NEURALINK REVOLUTION

What do brain implants do and why is Elon Musk making them?

Elon Musk's Neuralink company is conducting its first human trials, implanting a tiny chip onto the surface of a person's brain to allow them to talk directly with a computer.

What is Neuralink?

Neuralink was founded in 2016 by Elon Musk, who also runs SpaceX, Tesla and X, formerly Twitter, to create brain-computer interfaces: devices connected to the brain that allow people to communicate with computers by thought alone.

These devices could allow you to carry out simple tasks like searching for information or performing complex calculations with computers. They could theoretically also create technological telepathy, restore sight to people who are blind and enable paralysed people to control prostheses and regain their movement. Musk has said in the past that his company's technology could allow humans to form "a sort of symbiosis" with AI.

What has Neuralink achieved so far?

Neuralink's device, coin-sized and implanted beneath the skull, uses tiny wires to read neuron activity. Trials in pigs and monkeys have shown promising results, including a monkey playing Pong using the device. In May 2023, Neuralink received approval for human trials. According to Musk, a human received the implant on January 28 and is recovering well.

Is the technology safe?

Neuralink's previous animal experiments have faced challenges, with reports of unsuccessful trials and concerns over animal welfare violations. In 2022, the Physicians Committee for Responsible Medicine called for an investigation into alleged violations of the Animal Welfare Act related to invasive brain experiments on monkeys. Reuters reported that these tests resulted in the deaths of 1500 animals, causing unnecessary suffering. Regulatory approval for human implantation requires thorough safety assessments and understanding of potential risks.

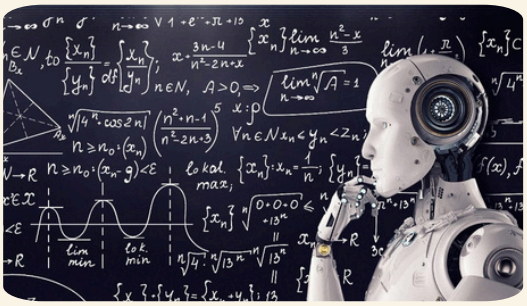
When will Neuralink be available and how much will it cost?

While commercialization of Neuralink's technology is on the horizon, extensive testing and accreditation are necessary before it becomes a reality. Musk has expressed intentions to bring the technology to market, with the first product, "Telepathy," enabling users to control devices like phones and computers. Other research trials have shown promising results in brain-spine interfaces for paralysis and interpreting brain waves for communication. However, these interfaces often require invasive neurosurgery and are still experimental, so widespread availability is likely years away.

NIYAMATH.P
717822L331
II EC-C

ARTICLE

FROM DATA TO DECISIONS: THE POWER OF MACHINE LEARNING



Machine learning is behind chatbots and predictive text, language translation apps, the shows Netflix suggests to you, and how your social media feeds are presented. It powers autonomous vehicles and machines that can diagnose medical conditions based on images. When companies today deploy artificial intelligence programs, they are most likely using machine learning — so much so that the terms are often used interchangeably, and sometimes ambiguously.

Machine learning is a subfield of artificial intelligence that gives computers the ability to learn without explicitly being programmed. Machine learning is a subfield of artificial intelligence, which is broadly defined as the capability of a machine to imitate intelligent human behavior. Artificial intelligence systems are used to perform complex tasks in a way that is similar to how humans solve problems.

The goal of AI is to create computer models that exhibit "intelligent behaviors" like humans, according to Boris Katz, a principal research scientist and head of the InfoLab Group at CSAIL. This means machines that can recognize a visual scene, understand a text written in natural language, or perform an action in the physical world.

Machine learning starts with data — numbers, photos, or text, like bank transactions, pictures of people or even bakery items, repair records, time series data from sensors, or sales reports.

There are three subcategories of machine learning:

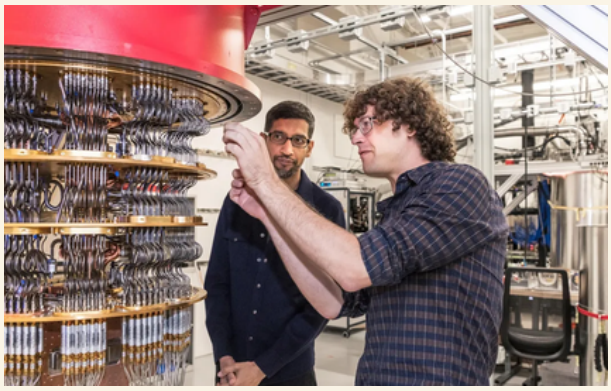
- Supervised machine learning models are trained with labeled data sets, which allow the models to learn and grow more accurate over time. For example, an algorithm would be trained with pictures of dogs and other things, all labeled by humans, and the machine would learn ways to identify pictures of dogs on its own. Supervised machine learning is the most common type used today.
- In unsupervised machine learning, a program looks for patterns in unlabeled data. Unsupervised machine learning can find patterns or trends that people aren't explicitly looking for. For example, an unsupervised machine learning program could look through online sales data and identify different types of clients making purchases. Reinforcement machine learning trains machines through trial and error to take the best action by establishing a reward system.
- Reinforcement learning can train models to play games or train autonomous vehicles to drive by telling the machine when it made the right decisions, which helps it learn over time what actions it should take.

BAVADHAARINI.K
717822L307
II EC-C

ARTICLE

QUANTUM UNLEASHED: TRANSFORMING THE TECH LANDSCAPE

The UK is at the forefront of a new era of quantum technologies. Ground breaking capabilities are emerging from our excellent research and industrial base, establishing the UK as a destination of choice for global Quantum Technology companies.



Quantum Technology Hubs

Through four Quantum Technology Hubs, the UK has established itself as a major player in the field of quantum research. The UK has flourished by producing world-leading research and forming lasting partnerships between industry, Research and Technology Organisations (RTOs), academia and government. This is supporting the rapid exploitation of quantum technologies on the road from academia to business and towards industrial maturity. Commitment by the UK Government with a new Quantum Strategy, backed by £2.5 billion in the next 10 years[1], to pave the way for new investment, fast-growing businesses and high-quality jobs to the UK.

What is quantum computing?

Quantum computing uses specialized technology—including computer hardware and algorithms that take advantage of quantum mechanics—to solve complex problems that classical computers or supercomputers can't solve, or can't solve quickly enough.Today, IBM Quantum makes real quantum hardware—a tool that scientists only began to imagine three decades ago—available to hundreds of thousands of developers. Our engineers deliver ever-more powerful superconducting quantum processors at regular intervals, alongside crucial advances in software and quantum-classical orchestration. This work drives toward the quantum computing speed and capacity necessary to change the world. These machines are very different from the classical computers that have been around for more than half a century. Here's a primer on this transformative technology.

Why do we need quantum computers?

Scientists and engineers rely on supercomputers for tackling tough problems, boasting thousands of CPU and GPU cores for complex calculations and AI. Yet, even these behemoths struggle due to their reliance on binary code and outdated transistor technology. When they falter, it's often due to the intricacies of complex problems, like modeling atomic behavior or detecting subtle fraud patterns. Classical computers hit their limits with such complexities. Enter quantum computing, leveraging quantum states to potentially revolutionize problem-solving in fields governed by quantum physics.

BOOMIKA.E
717822L206
II EC-B

ARTICLE
V2I COMMUNICATION: ENHANCING TRANSPORTATION EFFICIENCY AND SAFETY

What is Vehicle-to-Infrastructure (V2I) communication?

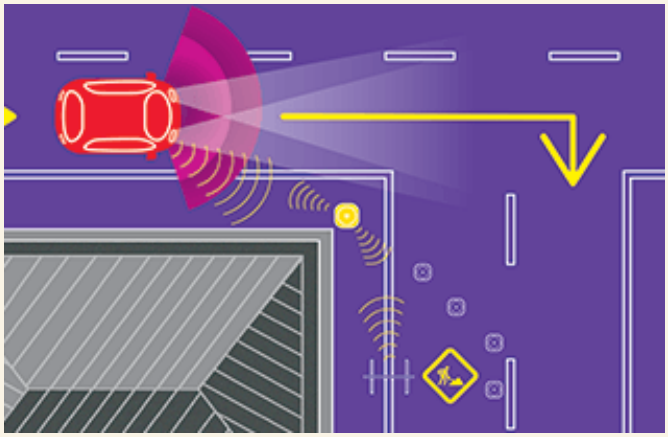
V2I communication allows vehicles and road infrastructure to exchange data wirelessly, facilitating safety, mobility, and environmental benefits. Through this system, vehicles receive real-time information from infrastructure like lane markings and traffic lights, while also providing feedback. This rich data exchange enhances transportation efficiency and safety.

Why do we need V2I?

The race for safe self-driving cars is intensifying, with both tech giants and traditional auto manufacturers vying for success. Major automotive players are poised to introduce autonomous vehicles as early as 2021, promising revolutionary benefits. Foremost among these is the potential to drastically reduce traffic fatalities by up to 90%, translating to around 30,000 lives saved annually in the U.S. alone, along with $190 billion in healthcare cost savings.

Road infrastructure will need to move from analog to digital

As we transition from basic cruise control to advanced automation, vehicles will assume greater responsibility, reducing the role of the driver. To navigate this shift, infrastructure must evolve to accommodate both human and machine vision. Analog messages on roadways must be replaced with digital ones that automated systems can interpret, enhancing redundancy and boosting the vehicle's confidence in making critical driving decisions.



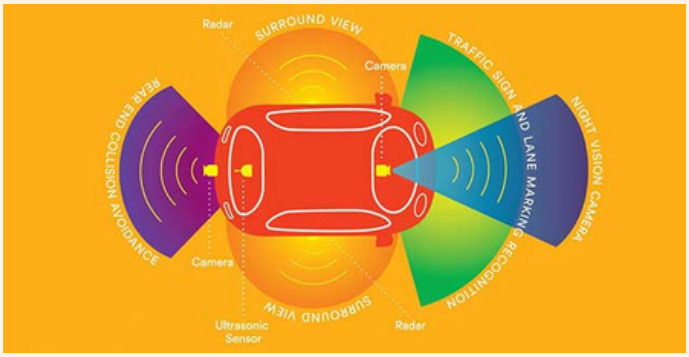
What could some V2I technologies look like?

Innovative infrastructure is crucial to support a digital ecosystem, especially for snow-covered pavement markings. Enhanced redundancies are needed to aid drivers, cameras, and sensors in decoding road rules effectively. Here are some emerging technologies for improved roadways, mobility, and safety:

- **Advanced Road Markings:** Pavement markings visible to both humans and machines in any condition. These markings work with automated vehicle sensors, improving lane detection and traffic safety, even in extreme weather.
- **Smart Signs:** Directional signage visible in any condition. Retroreflective signs enhance readability, enabling more accurate navigation and quicker decision-making for drivers and automated systems. They are also compatible with traditional signage.
- **Wireless Communication:** Direct communication to vehicles for quick identification of construction zones and safety hazards. This connectivity enhances vehicle mobility and traffic flow.

Redundancy: increasing safety and enhancing mobility

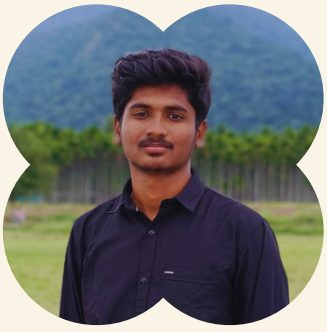
- No single system will guarantee safety. Safety will only increase if all vehicle systems are working together to improve the readability of pavement markings, traffic signs, and temporary traffic control signs and devices.
- Redundant systems take over when GPS isn't able to work, such as in a tunnel, or when pavement markings aren't visible to a vehicles' camera.
- Think of systems working together to improve mobility and safety for everyone. If buildings are blocking a satellite and GPS isn't working, or if snow has covered pavement markings, a LiDAR sensor or camera can provide the redundancies necessary to keep traffic moving efficiently, improve drive time and vehicle safety. Congestion is greatly reduced. People are more mobile. People get where they need to go faster —and more safely.
- State-of-the-art vehicles require state-of-the-art infrastructure. Improving infrastructure through redundancies is how we drive innovation, increase safety, enhance mobility, and create roadways of the future.



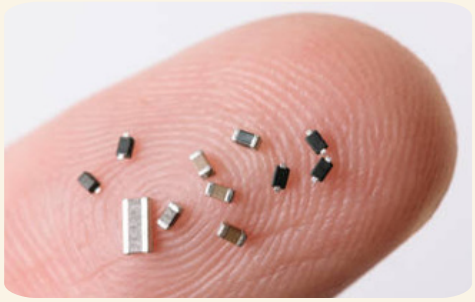
Benefits of V2I Communication:

- Improved Traffic Flow: By providing real-time information and coordination, V2I communication helps to optimize traffic flow, reduce congestion, and minimize delays.
- Enhanced Safety: V2I communication enables early detection of hazards and potential collisions, allowing drivers to react promptly and avoid accidents.
- Environmental Benefits: By reducing congestion and minimizing idling time, V2I communication can lead to lower fuel consumption and emissions, contributing to environmental sustainability.
- Efficient Resource Allocation: Traffic management centers can make more informed decisions and allocate resources more effectively based on real-time data, leading to better utilization of infrastructure and personnel.

NAVIN Y
717822L329
II EC-C

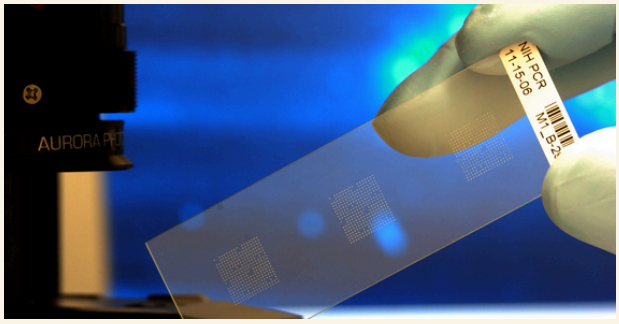


ARTICLE
MICROSCOPIC MARVELS: EXPLORING THE WORLD OF BIOCHIPS



The first biochip was invented by an American company namely Affymetrix, and the product of this company is GeneChip (DNA microarrays). These products comprise the number of individual DNA sensors used for sensing defects. Biochip plays an essential role in the field of biology research like systems biology as well as disease biology while the number of clinical applications is rising. It is a set of microarrays which are placed on a strong surface of a substrate to allow thousands of reactions to be performed in less time. The development of biochip mainly includes the combination of molecular biology, biochemistry, and genetics. Biochips are used for analyzing organic molecules connected with a live organism.

What is a Biochip?



A biochip is a set of diminished microarrays that are placed on a strong substrate that allows many experiments to be executed at the same time to obtain a high throughput in less time. This device contains millions of sensor elements or biosensors. Not like microchips, these are not electronic devices. Each and every biochip can be considered as a microreactor that can detect a particular analyte like an enzyme, protein, DNA, biological molecule or antibody.

The main function of this chip is to perform hundreds of biological reactions in a few seconds like decoding genes (a sequence of DNA).

Working Principle of a Biochip:

The working of Biochip mainly includes the following steps.

Step1: The operator generates a low-power electromagnetic field through radio signals

Step2: The fixed biochip gets turn on

Step3: The activated chip transmits the identification code reverse to the operator through radio signals

Step4: Reader strengthens the received code to change it into digital form and finally exhibits it on LCD.

Components of BioChips:

Transponder: Transponders are two types' namely active transponder and passive transponder. This is a passive transponder which means that it doesn't contain any of its own energy or battery whereas in passive, it is not active until the operator activates it by giving it a low electrical charge. This transponder consists of four parts such as antenna coil, computer microchip, glass capsule, and a tuning capacitor.

1. The computer microchip stores a unique identification (UID) number that ranges from 10 digits to 15 digits long.

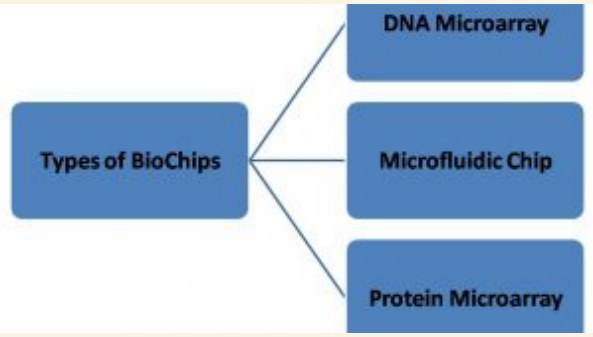
2. The antenna coil is very small, primitive and this type of antenna is used to send and receive the signals from the scanner or reader.

3. The charging of the tuning capacitor can be done with the small signal i.e, 1/1000 of a watt which is sent by the operator.

4. The glass capsule holds the antenna coil, capacitor, and microchip, and it is made with a biocompatible material namely soda lime glass.

Reader: The reader comprises of a coil namely "exciter" and it forms an electromagnetic field through radio signals. It offers the required energy (<1/1000 of a watt) to activate the biochip. The reader carries a receiving coil for receiving the ID number or transmitted code sent back from the excited implanted biochip.

Types of BioChips:



Reader: The reader comprises of a coil namely "exciter" and it forms an electromagnetic field through radio signals. It offers the required energy (<1/1000 of a watt) to activate the biochip. The reader carries a receiving coil for receiving the ID number or transmitted code sent back from the excited implanted biochip.

Advantages

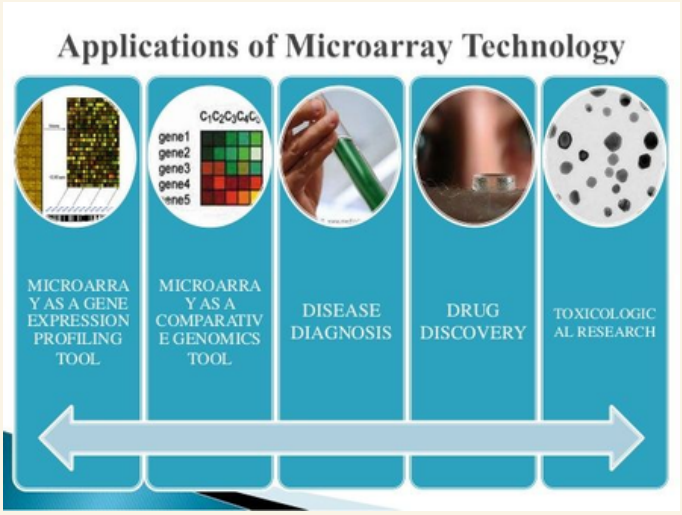
- The biochip is used to rescue the sick
- Very small in size, powerful and faster.
- Biochips are useful in finding the lost people
- Biochips can be used to identify the persons individually
- Biochips perform thousands of biological reactions in a few seconds.

Disadvantages

- Biochips are expensive
- Biochip raises dangerous problems of individual privacy.
- Biochip marks the end of human being liberty and self-respect.
- There will be a chance of turning every person into a controlled person
- Biochips can be fixed into the human's body without their interference.

Applications

- By using this chip we can trace a person or animal anywhere in the world.
- This chip is used to store and update the information of a person like medical financial and demographics.
- A biochip leads to safe E-commerce systems • These chips are effective in restoring the records of medical, cash, passport, etc.
- The biochip can be applicable in the medical field as a BP sensor, glucose detector, and oxygen sensor.

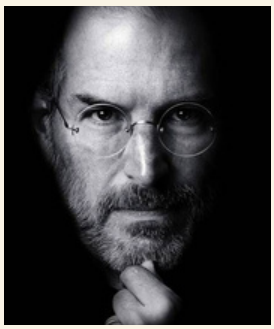


JEEVITHA.A
717822L317
II EC-C

SAYINGS

VISIONARIES OF INNOVATION: THE IMPACT OF STEVE JOBS, RATAN TATA, AND ELON MUSK ON MODERN BUSINESS

Steve Jobs



Steve Jobs loved simplicity in both his wardrobe and product designs, aiming for minimalist aesthetics even in complex products. This obsession, seen as both good and bad by those who knew him, highlighted his belief that design is about functionality as much as appearance. His dedication to simplicity led to constant iterations in design. In a Business Week interview, he stated, **“Simple can be harder than complex: you have to work hard to get your thinking clean to make it simple. But it’s worth it in the end because once you get there, you can move mountains.”**

Ratan Tata

Mr. Tata, a leading philanthropist in India, is a strong supporter of education, medicine, and rural development. He aided the University of New South Wales in developing technology for improved water in challenged areas and established the MIT Tata Center to address resource-constrained communities' challenges. His mission was to transform Tata from an India-centric group into a global business. He emphasized, **"We need to stop taking baby steps and start thinking globally. It really seems to be helping."**

Elon Musk

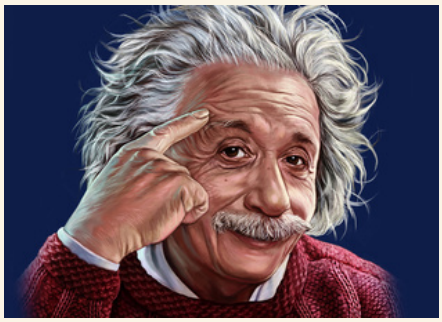
Elon Musk, who became the richest man in January 2021, is a controversial figure due to his refusal to adhere to industry norms or common sense, despite founding some of the most eminent businesses. He often blocks journalists and media outlets that critique his companies. Former employees say his current public behavior reflects how he has always been privately. Musk seems indifferent to others' opinions, believing, "If you disagree with anything Elon Musk says or does, it’s no skin off his nose. You suck." **He advises, "Constantly think about how you could be doing things better and questioning yourself."**

SABITH AZEEZ S
717822L343
II EC-C

SAYINGS

LEGENDS OF SCIENCE: THE LIVES AND LEGACIES OF ALBERT EINSTEIN, ABDUL KALAM, AND STEPHEN HAWKING

Albert Einstein



Einstein, who faced isolation and speech challenges growing up, wasn't always seen as a genius. In 1905, he published papers that began his famous theory of relativity, confirmed by a solar eclipse in 1919. He won the Nobel Prize in Physics in 1921.

In 1933, as Hitler rose to power, Einstein, being Jewish and German-born, immigrated to the U.S. and joined Princeton's Institute of Advanced Study. He used his voice to speak out against racism and nationalism throughout his career.

"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike—and yet it is the most precious thing we have."

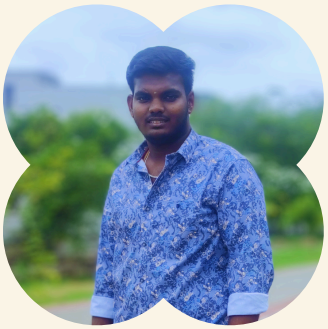
Dr. A. P. J. Abdul kalam

The quote, **"The purpose of education is to make good human beings with skill and expertise... Enlightened human beings can be created by teachers,"** is attributed to former Indian President Dr. A.P.J. Abdul Kalam. Kalam believed education should produce skilled individuals of good character and emphasized the role of teachers in creating enlightened individuals. He stressed social responsibility, learning, creativity, perseverance, hard work, and devotion to goals. He took initiatives to establish skill-based education in India, advocated for contributing positively to society, and believed failure is a part of learning, encapsulated in his saying, **"FAIL stands for First Attempt In Learning."**

Stephen Hawking

“ One, remember to look up at the stars and not down at your feet. Two, never give up work. Work gives you meaning and purpose and life is empty without it. Three, if you are lucky enough to find love, remember it is there and don’t throw it away.”

POOMESHWARAN L
717822L333
II EC-C



PHOTOGRAPHY

Photography freezes time, revealing beauty, emotions, and stories. It transcends boundaries, preserving memories and sharing experiences, capturing the essence of humanity in every frame.

Through the Lens: Exploring Nature's Wonders

Photography by Sibi

SIBI.P
717822L349
II EC-C

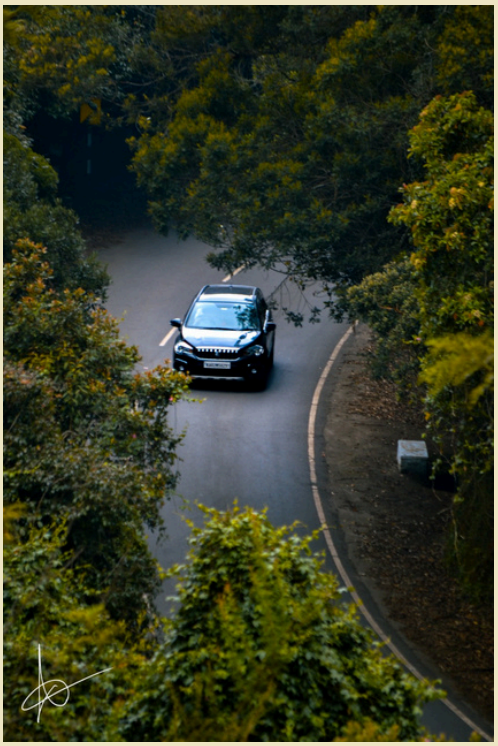
Frame by Frame: Unveiling Life's Story

Photography by Pradhiksha

PRADHIKSHA S
717822L237
II EC-B

Snapshots of Life: Capturing Moments in Time

Photography by Aaditya



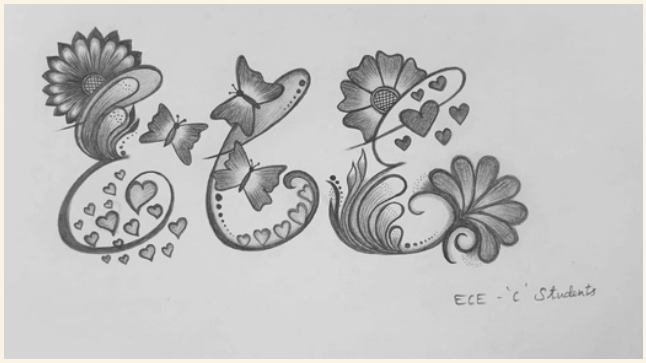
AADITYA V
717823L101
I EC-A

Creativity

Creativity is the spark of innovation, igniting imagination to craft unique solutions and expressions. It thrives in freedom, fueled by curiosity and passion. With every stroke, note, or idea, creativity shapes our world, pushing boundaries and inspiring change.

NAME ART

By Sangavi



SANGAVI S
717822L344
II EC-C

PENCIL DRAWING

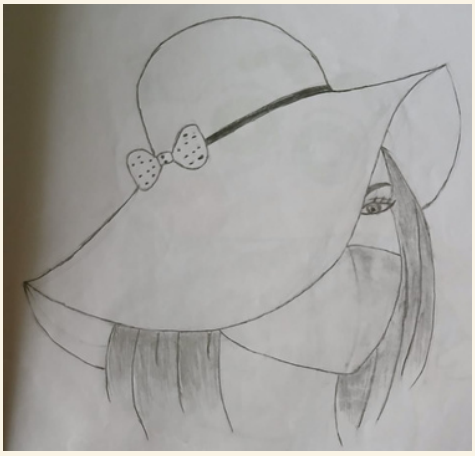
By Boomika and KalyanaSundhari

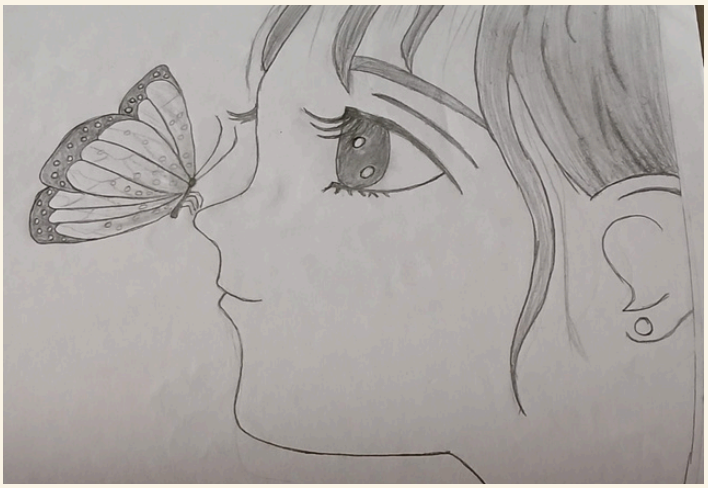
BOOMIKA.E
717822L206
II EC-B

SRIKALYANASUNDHARI
717822L255
II EC-B

PENCIL DRAWING

By Penciya

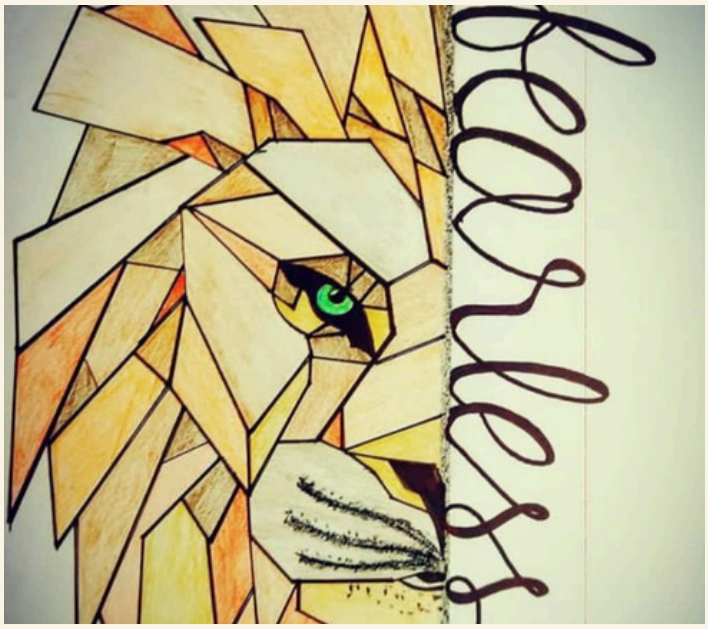




PENCIYA P
717822L332
II EC-C

PAINTING

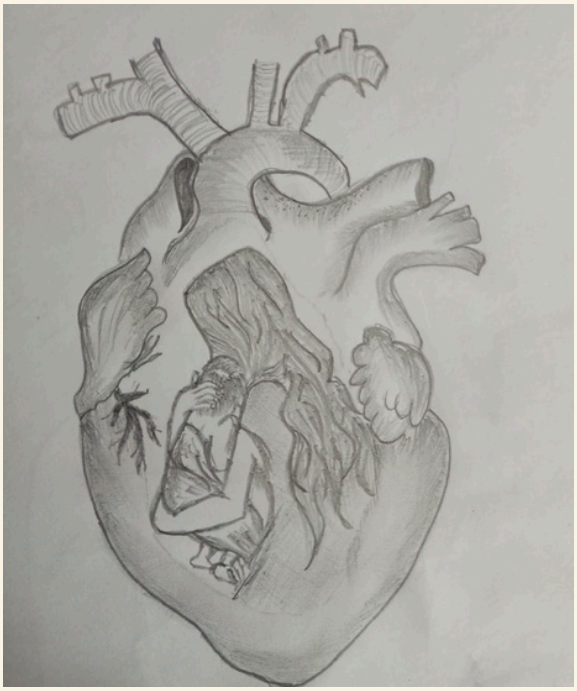
By Priya



PRIYA R
717822L336
II EC-C

PENCIL DRAWING

By Lathika and Sathishkumar

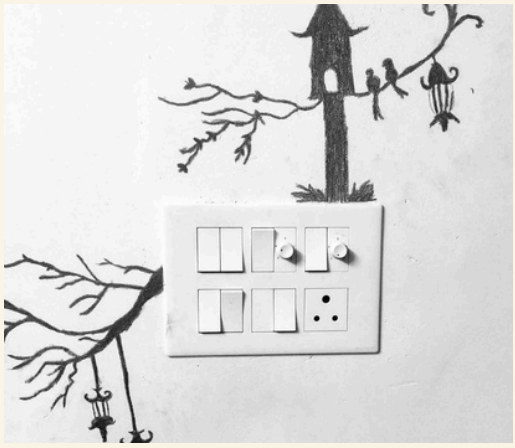


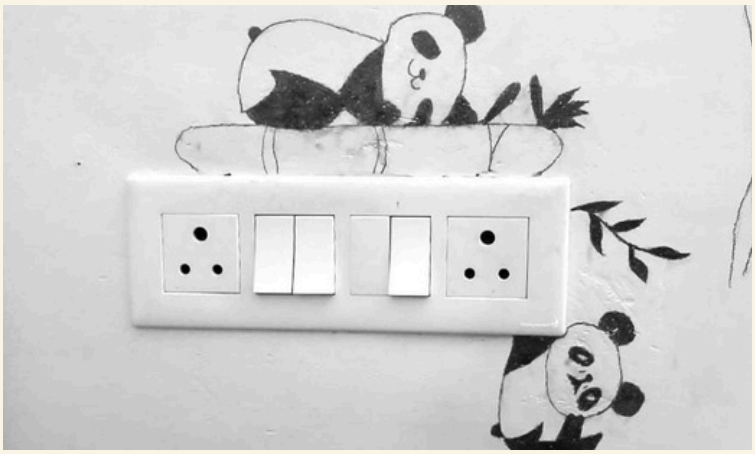
LATHIKA S
717822L129
II EC-A

SATHISHKUMAR P
717823L351
I EC-C

WALL DRAWING

By Boomika and Akshaya





BOOMIKA.E
717822L206
II EC-B

AKSHAYA M
717822L302
II EC-C

MEHANDI

By Sangavi and Lathika

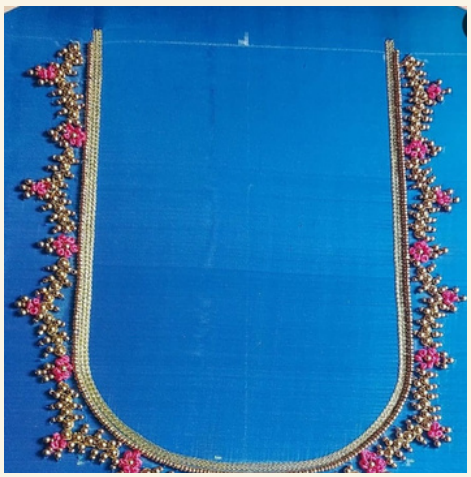
SANGAVI S
717822L344
II EC-C

LATHIKA S
717822L129
II EC-A

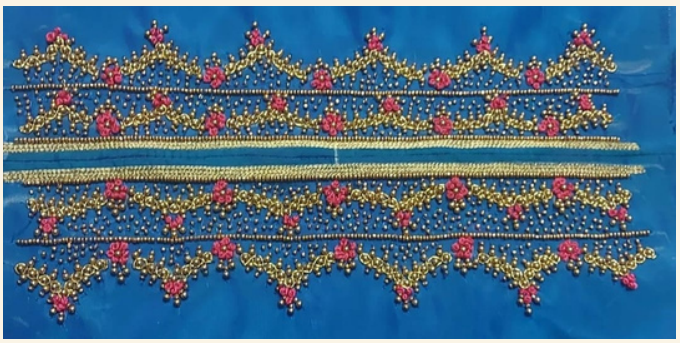
AARI WORK

By Reshma







RESHMA M S
717822L340
II EC-C

CRAFT WORK

By Dheivani

DHEIVANI M
717822L210
II EC-B

WRITINGS AND POEMS

Writings and poems convey thoughts, emotions, and stories. They blend creativity with language, exploring themes like love, nature, and human experience. Poetry often uses rhythm, rhyme, and vivid imagery.

Once upon a time, in a bustling marketplace in Palestine, there stood a watermelon unlike any other. This watermelon was not content to sit idly by and be consumed without purpose. No, this watermelon had a voice, and it was determined to use it to speak out against the injustices that plagued its homeland.

The watermelon's journey began in a small village nestled amidst olive groves and vineyards. From its perch in the marketplace, it witnessed the struggles of the Palestinian people the hardships of life under occupation, the destruction of homes and livelihoods, and the daily indignities faced by its fellow fruits and vegetables

Determined to make a difference, the watermelon decided to take a stand. It began by spreading messages of peace and solidarity, urging its fellow produce to join together in the fight against oppression. It spoke of unity and resilience, reminding everyone that they were stronger together than they were apart.

But the watermelon's activism did not end there. It also used its platform to raise awareness about the plight of the Palestinian people, sharing their stories with anyone who would listen.

It spoke of the beauty of its homeland the rolling hills, the sparkling rivers, and the ancient olive trees and the resilience of its people in the face of adversity.

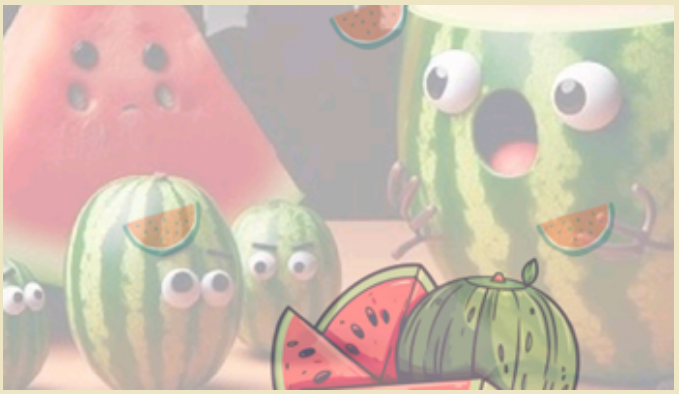
As word of the watermelon's protests spread, it became a symbol of hope and resistance for the people of Palestine.

Crowds gathered in the marketplace to hear its impassioned speeches, and its message resonated far and wide, inspiring others to join the fight for justice and equality.

But the watermelon's activism did not come without risks. It faced threats and intimidation from those who sought to silence its voice, but it refused to back down.

With courage in its heart and determination in its soul, the watermelon continued to speak out, knowing that its cause was just and that the Palestinian people deserved nothing less than freedom and dignity.

And though its journey was fraught with challenges and obstacles, the watermelon never lost sight of its goal. It remained steadfast in its commitment to justice, standing tall as a symbol of resistance against injustice and a beacon of hope for a better tomorrow for all.



JANNATHUL NISHA S
717822L123
II EC-A

கவிதைகள்

இயற்கை

என்றாவது ஒருநாள் நீயும்
என்னைவிட்டு சென்று விடுவாய்
என்று அஞ்சினேன்...
ஆனால், யார்போனாலும் உன்னுடன்
கடைசிவரை இருப்பது நான்
மட்டும்தான் என்று கூறினாய்...
இன்பத்தில் உன்னை தேடுவோனோ
இல்லையோ ஆனால் என் துன்பத்தில்
நான் தேடுவது உன்னை
மட்டும்தான்... தாய்க்கு தாயாக...
தந்தைக்கு தந்தையாக...

தோழிக்கு நல்ல தோழியாக
என்னுடன் இருக்கிறாய் என்
தனிமையில்....
யாரும் இல்லா நேரத்தில் எனக்கு
அனைத்துமாக இருந்தவன்
இருப்பவன் நீ...

அப்பா

ஆயிரம் கவலைகள் தன்னுள் இருக்கும்
எல்லாவற்றையும் மறைத்து தன்
இளவரசியின் கவலைகளுக்கு காது
கொடுப்பார் ..!!

கேட்காவிட்டால் கூறமாட்டார்

கேட்டாலும் மறைக்கப்பார்ப்பார்... கிழிந்த
வாழ்க்கையை அணிந்து கொண்டு தன்
இளவரசியின் வாழ்க் கை கிழியாமல்
இருக்க பாடுபடுவார்..!!

என்றும் உந்தன் இளவரசியாக இருக்க
பெருமிதம் கொள்கிறேன் அப்பா..

SANGAVI S
717822L344
II EC-C

கவிதைகள்

என் நண்பர்கள்

கடந்து சென்ற பாதையோ
-எளிதில்லை
கடக்க விற்கும் பாதையோ
கடினமில்லை.
காலங்கள் மாறலாம்
பாதைகளும் மாறலாம் ஆனால்
என்னுடன் என்றும் நடப்பது -என்
நண்பர்கள்

நிலா

இரவின் இருளில்
இயற்கையின் வனப்பில் சொல்லத்
தெரியாத வார்த்தைகளோடு
என்னில் அடங்கா நினைவுகளுடன்
நானும் அவளும்

-நிலா

என் தோழி

நான் கிறுக்கத் தொடங்கினேன் அவள்
திருந்தத் தொடங்கினாள் நான்
சொல்லத் தொடங்கினேன் அவள்
கேட்கத் தொடங்கினாள் நான் கற்க
நினைத்தேன் அவள் கற்பிக்கவே
தொடங்கிவிட்டாள் நான் நடக்க
நினைத்தேன் அவள் பறக்க சொன்னாள்
நான் அயரப் பறக்க அவள் உதடுகள்
சிரித்தன பீயரப் பறக்கும் என்னை
-உலகம் பார்க்கிறது.

ஆனால் நான் தெடுவதோ - அவள்
முகத்தை...!

-என் தோழி

JAYASRI S
717822L220
II EC-B

கவிதைகள்

கண்ணாடி போல் இதயமோ
உடைந்தது..

உனது நினைவோ இன்னும் ஆழமாய்
நுழைந்தது.....

நீ எனது இல்லை என்று புரிந்தது....

உன்னை மறக்கும் மனமோ
தொலைந்தது...

தேன் உள்ள பூவோ நீயடி....

உன்னை சுற்றி வரும் வண்ணப்
பறவையோ நானடி.

சிறகிலிருந்து விழுந்த இறகு போல்
ஆனேனடி...

கரை இல்லா நதி போல் போனேனடி....

பார்க்க முடியாத தூரத்தில் நீயும்

உன்னை பார்க்கும் ஆர்வத்தில் நானும்

வானமோ இருண்டது

வெண்ணிலவோ பூ போல் பூத்தது

அதில் உன்னை கண்டேனே

ஆசை கொண்டேன

மறக்காமல் வந்து விடு என் கனவில்

உனகாகவே காத்திருப்பேன் உன்
நினைவில்

HARIHARAN R
717823L120
I EC-A

WRITINGS

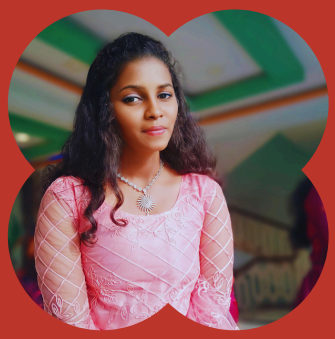
Life Changed Forever?

Life is a beautiful gift from God, encompassing existence, hope, and survival. It's an intricate tapestry of experiences that we weave each day, filled with opportunities for growth and new beginnings. Every day is like a new paragraph in a beautiful poem, offering fresh chances to create and narrate our unique stories. The beauty of life lies in reflecting on our journeys, understanding that each path is distinct and personal. Happiness is not a universal state but a treasure that must be sought and cultivated individually.

Life is more than just a series of events; it’s a precious gift imbued with honor, spark, and excitement. It's about finding joy in the simple moments and appreciating the profound ones. The secret to true happiness is not necessarily in doing what you like but in finding joy and contentment in whatever you do. This perspective transforms mundane tasks into fulfilling experiences and challenges into opportunities for growth.

In this ever-changing journey, life presents us with endless possibilities and moments of wonder. Embrace each day with gratitude and an open heart, for life, with its unpredictable nature, is a constant source of amazement and joy. Indeed, life, in its entirety, is a beautiful adventure worth cherishing.

MONISHA R
717822L230
II EC-B



SPORTS

Sports foster teamwork, discipline, and physical fitness. They offer excitement and camaraderie, uniting people globally. Through competition and perseverance, sports inspire personal growth and promote a healthy, active lifestyle.

KHO KHO

THE ACHIEVEMENTS OF A REMARKABLE KHO KHO PLAYER

Kho Kho, a traditional Indian sport, is a thrilling game of chase and agility. Originating in Maharashtra, it involves two teams of twelve players each, with nine active players on the field. The objective is to avoid being touched by opponents while navigating a confined rectangular court. Kho Kho demands quick reflexes, strategic thinking, and exceptional teamwork.

Dhanush, a first-year student in the Department of Electronics and Communication Engineering at Karpagam College of Engineering. Despite his early academic stage, Dhanush has already achieved significant milestones in Kho Kho, showcasing his dedication and talent.

Dhanush's impressive record includes securing the fourth position at Mahalingam College of Engineering and Technology in Coimbatore and at Kumaraguru College of Technology. Additionally, he earned the fifth position at Coimbatore Institute of Technology. His most notable accomplishment came at his home institution, Karpagam College of Engineering, where he achieved first place. This victory not only solidified his reputation as an exceptional Kho Kho player but also brought pride to his college.

Balancing academics and sports, Dhanush exemplifies the spirit of a true athlete. His journey in Kho Kho is a testament to his hard work, dedication, and passion, serving as an inspiration to his peers and aspiring players. As he continues his journey, Dhanush is poised to achieve even greater heights in both academics and sports.

DHANUSH N B
717823L111
I EC-A

KHO KHO

NADISH: SPRINTING TOWARDS SUCCESS IN KHO KHO

Imagine a game where you run, dodge, and chase to win—it's called Kho Kho. Nadish, a first-year student at Karpagam College of Engineering, is really good at this exciting sport.

Kho Kho is played between two teams, and Nadish is a key player in his team. He's not only fast but also smart on the field, making quick decisions to outsmart his opponents. Despite having a lot of college work, Nadish has managed to shine in various Kho Kho tournaments.

At Mahalingam College of Engineering and Technology in Coimbatore, he secured the fourth position. He also performed well at Kumaraguru College of Technology and Coimbatore Institute of Technology, earning the fourth and fifth positions, respectively. But his biggest achievement came when he won first place at his own college, Karpagam College of Engineering.

Nadish's journey in Kho Kho teaches us about hard work, dedication, and perseverance. He shows us that with passion and determination, we can overcome any challenge. As he continues to excel in both academics and sports, Nadish inspires others to chase their dreams and reach for the stars. With his talent and drive, there's no doubt that Nadish will continue to shine bright in the world of Kho Kho.

NADISH N
717823L332
I EC-C

VOLLEY BALL

SETTING THE COURT ABLAZE: SUDHARSAN'S VOLLEYBALL TRIUMPHS

Volleyball, renowned for its fast-paced action and team dynamics, finds a stellar player in Sudharsan from the Department of Electronics and Communication Engineering at Karpagam College of Engineering. This exhilarating sport demands agility, strategy, and precise coordination.

Sudharsan's journey in volleyball is marked by a string of remarkable victories, showcasing his skill and dedication. He led his team to triumph at Park College of Engineering on 12th August 2023, followed by another impressive win at SNS College of Engineering on 21st September 2023.

Continuing his winning streak, Sudharsan secured victories at Sri Sakthi College of Engineering on 15th October 2023, Sri Krishna College of Engineering on 12th January 2024, and Covai Ties on 21st January 2024. However, his crowning achievement came on 12th February 2024 when he led his team to victory at Coimbatore Institute of Technology.

Sudharsan's exceptional performance on the volleyball court exemplifies determination and skill. His achievements not only bring pride to his college but also inspire aspiring athletes. With his talent and dedication, Sudharsan continues to make his mark in the world of volleyball, representing the essence of sportsmanship and excellence.

SUDHARSAN D
717822L357
II EC-C

KABBADI

ANISH: RISING THROUGH KABBADI TRIUMPHS

Kabbadi, deeply rooted in Indian tradition, is a rugged sport that demands strength, agility, and tactical prowess. Played between two teams, it involves raiding opponents' territory while chanting "kabaddi, kabaddi" to score points, all while dodging tackles from defenders.
In the world of Kabbadi at Karpagam College of Engineering, Anish stands out as a formidable player. Operating as both a corner defender and raider, his versatility on the field is unmatched.

Anish's journey in Kabbadi is adorned with numerous accolades, a testament to his dedication and skill. He began his winning streak by claiming the Kabbadi championship under 14 at Jayanthi Matric HR Sec School in Tirupur, followed by a district-level victory at RVG HR Sec School in Udumalpet.

His talent caught the eye of selectors, leading to a state selection at Government HR Sec School in Trichy. Anish continued to excel, securing victories at the school level under 17 category and emerging as the Jonel winner at Professional Engineering College.
Anish's prowess in Kabbadi was further recognized with a state-level selection under 17 in March 2022. His achievements extend beyond school and college competitions, evident in his runner-up position at the departmental match Yukha 23 in June 2023.

Anish's journey in Kabbadi mirrors his resilience and passion for the sport. His accomplishments not only bring pride to his college but also serve as an inspiration for aspiring athletes. With his unwavering dedication and talent, Anish continues to make strides in the world of Kabbadi, embodying the spirit of sportsmanship and excellence.

ANISH P
717822L303
II EC-C

TESTIMONIAL FOR THE GRADUATING CLASS OF 2024 (BATCH 2020)

Dear Graduating Class of 2024,

On behalf of the Department of Electronics and Communication Engineering at Karpagam College of Engineering, I extend my heartfelt congratulations to each one of you. This moment marks the culmination of years of dedication, hard work, and perseverance, and we are incredibly proud of all you've accomplished.

As the Head of the ECE Department, I've had the privilege of watching you grow from curious learners into skilled professionals, ready to make your mark in the world. The knowledge and experience you've gained here will serve as the foundation for the many opportunities that lie ahead of you.

Whether you're entering the workforce, pursuing higher studies, or exploring new ventures, remember that learning is a lifelong journey. Stay curious, embrace challenges, and continue to evolve. The field of electronics and communication is rapidly advancing, and as graduates, you have the potential to drive innovation and change.

Success is not only about the destination but also the journey. Embrace every opportunity with determination, remain humble, and let your passion for technology guide you. The future is bright, and I am confident you will excel in whatever path you choose.

Wishing you all success and fulfillment in your future endeavors. Go forth and make us proud!

With warmest regards,
Dr. R. Sarankumar, M.E., Ph.D.,
Head of Department of EC.

Dear Graduates,
It has been an absolute honour and privilege to witness your incredible journey here at Karpagam College of Engineering, Coimbatore – 32. As faculty, we are proud of the growth, perseverance, and success you've achieved over the past few years. Your dedication, curiosity, and pursuit of knowledge have not only enriched your lives but also uplifted the spirit of our institution.

Each of you has left a unique mark on this academic community. We are confident that the same energy, optimism, and talent you have demonstrated here will lead you to great heights in your future endeavours. The world is full of opportunities, and we trust you will seize them with the same zeal and courage you have shown throughout your time with us.

On behalf of the entire faculty, I want to extend my heartfelt congratulations and best wishes. Remember, the lessons learned here will be your guiding light as you take the next steps in your careers and personal lives. You have a bright future ahead!

With warmest regards,
Dr. R. Selvakumar, M.E., Ph.D.,
Assistant Professor/Department of EC

Dear Engineers!!

As an Assistant Professor in the Electronics and Communication Engineering Department, I am proud to be part of a dynamic field that continually shapes our world. The department stands at the forefront of innovation, fostering an environment where students are encouraged to explore, experiment, and excel.

Electronics is integral to numerous industries, from telecommunications and healthcare to renewable energy and automation. Our curriculum not only covers foundational theories but also emphasizes hands-on experience with cutting-edge technologies, preparing students for the challenges of a rapidly evolving job market.

I am particularly inspired by the collaboration among faculty and students, which cultivates a rich learning atmosphere. Our research initiatives focus on key areas such as advanced circuits, embedded systems, and communication technologies, allowing us to contribute meaningfully to both academia and industry.

As we advance, I urge all students to embrace curiosity and innovation. Together, we can drive progress in the electronics field, creating solutions that will define the future.

With warmest regards,
Dr. G. Arun Francis, M.E., Ph.D.,
Assistant Professor/Department of EC

Dear Graduates!

It is with immense pride and admiration that I extend my heartfelt congratulations to the graduating batch of 2024. Throughout your time here, you have demonstrated remarkable dedication, resilience, and passion in your pursuit of knowledge and growth. From overcoming challenges to embracing opportunities, you have evolved not only as students but as individuals ready to make a meaningful impact in the world.

Your collective accomplishments, both inside and outside the classroom, speak volumes about your commitment to excellence. You have shown that success is not merely defined by academic achievements, but by your curiosity, teamwork, and the positive relationships you have fostered along the way. Each of you has brought a unique perspective and set of talents to this journey, contributing to a diverse and vibrant learning community.

As you step into the next chapter of your lives, carry with you the lessons learned, the friendships formed, and the confidence that you are well-equipped to face the challenges and opportunities that lie ahead. You have the potential to shape a future that is brighter, more innovative, and more compassionate.

Congratulations once again! We are all incredibly proud of you and cannot wait to see all that you will accomplish in the years to come.
Best wishes for your continued success!

Warm regards,
Mr. C. Mukuntharaj, B.E., M.E.,
Assistant Professor/Department of EC

Dear Graduates,

I still remember when you first stepped into our institution, full of hope and ambition. Today, I'm proud to see the confident, capable individuals you've become. Your journey ahead will be filled with challenges and triumphs. Draw from the lessons you've learned, the friendships you've forged, and the experiences you've had. Stay true to your passions and values. As you go forth, know that you have the power to make a difference.

As you close this chapter and embark on the next, remember that the world needs your unique perspective, skills, and talents. Go forth with confidence, curiosity, and compassion. Chase your dreams, take calculated risks, and never stop learning. Surround yourself with people who uplift and inspire you. Your education has prepared you for the challenges ahead, but it's your character, resilience, and determination that will truly shape your success.

Best wishes for a bright, purposeful future!

With warmest regards,
Dr. C. Priya, M.E., Ph.D.,
Associate Professor/Department of EC

Dear Graduates!!

It is a privilege to witness your implausible journey here at Karpagam College of Engineering, Coimbatore – 32. As a tutor of IV ECE A students, I am very proud of the progress, determination, and achievement you've attained over the past four years.

Congratulations on reaching this incredible milestone in your academic journey! Your hard work, dedication, and perseverance have brought you to this moment of achievement, and it's time to celebrate everything you've accomplished. As you step into the next phase of your life, remember that learning doesn't stop here. Continue to stay curious, remain open to new ideas, and always strive for growth—both personally and professionally. Challenges will come your way, but you have proven time and again that you can rise to the occasion.

Success is not just about the destination; it's about the journey. As you move forward, embrace every opportunity, remain humble, and never forget the power of persistence. Whether you are entering the workforce, pursuing further studies, or exploring new adventures, trust that the skills and experiences you've gained will guide you.

I am very proud of you all that you have achieved. May the future bring you joy, success, and fulfillment in every endeavor. Keep dreaming big, and don't be afraid to forge your own path.

With warmest regards,
Ms. L. Saranya, M.E.,
Assistant Professor/Department of EC

Dear Class of 2024,

As you prepare to close one chapter and begin another, I want to take a moment to congratulate each one of you on this remarkable achievement. Your time here at Karpagam College of Engineering, Coimbatore, has been filled with hard work, countless hours of study, and the pursuit of excellence—and today, all of that effort has paid off.

It has been a privilege to witness your academic journey, seeing you grow not just as students but as individuals ready to step into the world beyond these walls. The passion, creativity, and resilience you've shown over the past four years reflect the bright future that awaits you.

As you transition into the next stage of life—whether it's starting your career, continuing your education, or exploring new adventures—remember that learning is a lifelong journey. The experiences and knowledge you've gained here will form the foundation for your dreams, but it's your determination and drive that will carry you to greater heights. Stay curious, embrace challenges, and never stop striving for excellence. Success is not only measured by your achievements but by the lessons learned along the way. Be bold in facing whatever comes your way, for you have already proven you are capable of overcoming any obstacle.

Wishing you all the best in your future endeavors. May your path ahead be filled with happiness, fulfillment, and success.

With warmest regards,
Ms. S . Ramprasath, B.E., M.E.,
Assistant Professor/Department of EC

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

•**PEO1:** Graduates will be able to comprehend Mathematics, Science, Engineering fundamentals, laboratory and work based experience to formulate and solve problems related to the domain and shall develop proficiency in computer based engineering and the use of computational tools.

•**PEO2:** Graduates will be prepared to communicate and work team based on the multidisciplinary projects practicing the ethics of their profession with a great sense of social responsibility.

•**PEO3:** Graduates will recognize the importance of lifelong learning to shine as experts either as entrepreneurs or as employees and thereby broadening their professional knowledge.

PROGRAMME OUTCOMES (PO)

GRADUATES WILL HAVE

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems

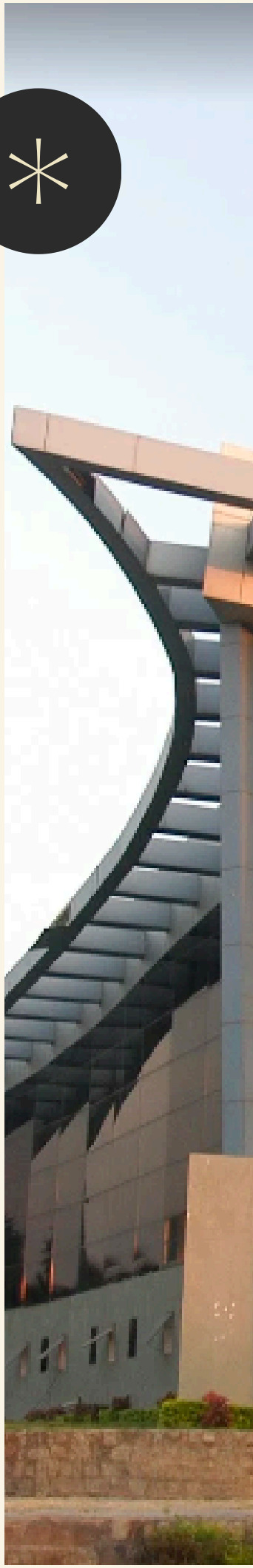
•**PO2:** Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

•**PO3:** Design/ Development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

•**PO4:** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

•**PO5:** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

•**PO6:** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.



•**PO7:** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

•**PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

•**PO9:** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

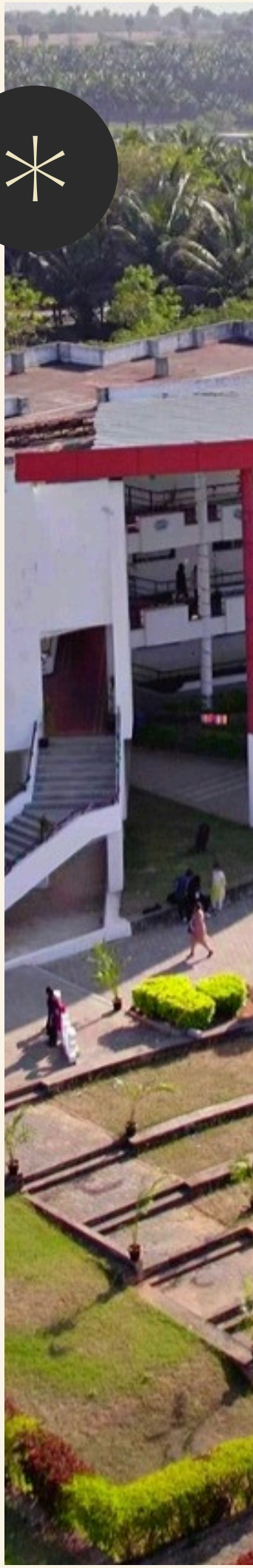
•**PO10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PROGRAM SPECIFIC OUTCOMES (PSO)

GRADUATES WILL HAVE

•**PSO1:** Good knowledge and hands-on competence to solve emerging real-world problems related to Electronic Devices and Circuits, Communication Systems, Digital Systems, and Electro-magnetics.

•**PSO2:** Demonstrate proficiency in specialized software packages and computer programming useful for the analysis/design of electronic engineering systems and profession.



KARPAGAM
COLLEGE OF ENGINEERING
Rediscover | Refine | Redefine
Accredited by NAAC with 'A+' grade
Autonomous | Affiliated to Anna University
(An ISO 9001:2015 and ISO 14001:2015 Certified Institution)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING