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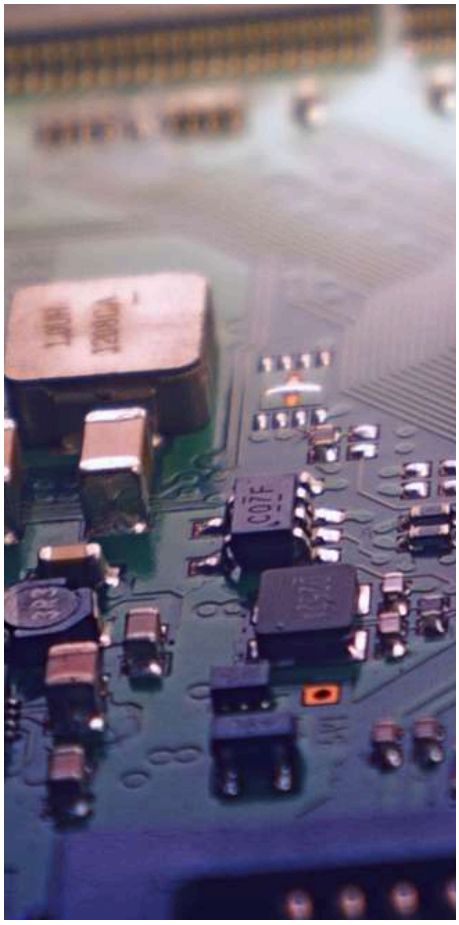

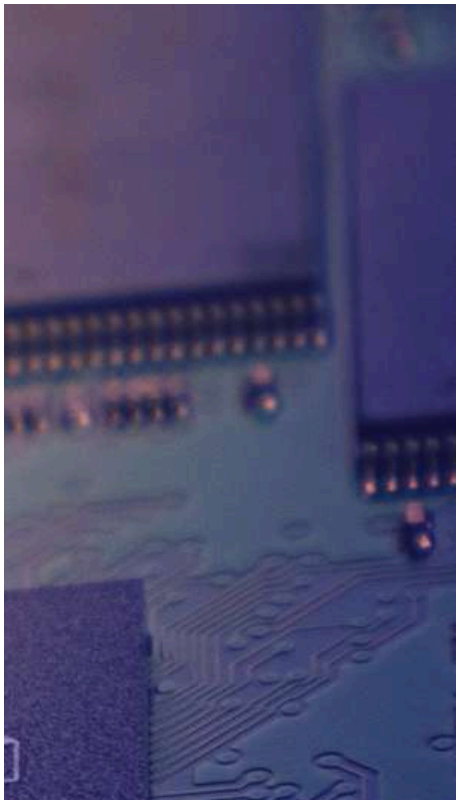

MAGAZINE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

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Edited by
Jeeva .S
Jegadeswaran.R
3rd year -ECE

VISION AND MISSION

VISION OF THE INSTITUTION

- Transform lives through Education and Research

MISSION OF THE INSTITUTION

- To impart quality education to students through critical thinking, creativity, leadership and the spirit of entrepreneurship

VALUES OF THE INSTITUTION

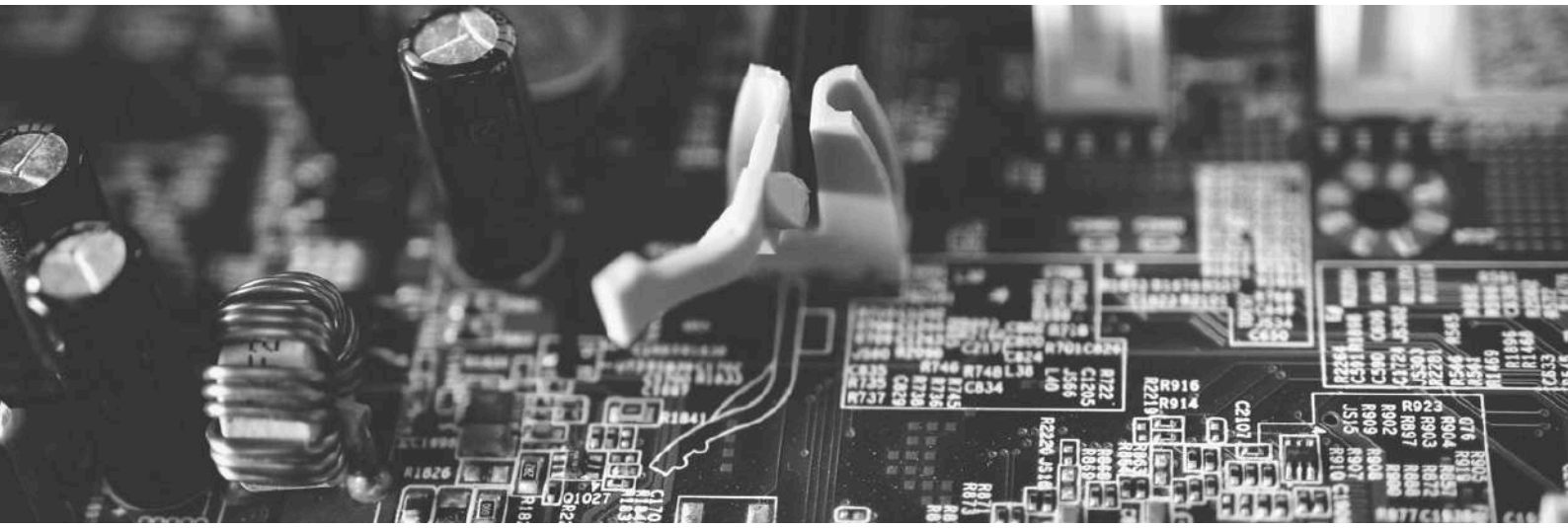
- We develop in each member the ability and passion to work effectively for the betterment of humanity with cultural awareness, high ethical and moral values and a sense of social responsibility

DEPARTMENT VISION

- To produce globally competent Electronics and Communication Engineers.

DEPARTMENT MISSION

- M1 : To Impart Value-based Technical Education with a state of art technologies to meet industry standards.
- M2 : To foster critical thinking and creativity through research and experimentation.
- M3 : To prepare our students to be a lifetime professional with Creativity and Leadership.



KNOWLEDGE AND ATTITUDE PROFILE & PROGRAM OUTCOMES

Knowledge and Attitude Profile (WK)

WK1 (NATURAL SCIENCE):

A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.

WK2 (MATHEMATICS AND MODELLING):

Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.

WK3 (ENGINEERING FUNDAMENTALS):

A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline.

WK4 (ENGINEERING SPECIALIZATION):

Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.

WK5 (ENVIRONMENTAL IMPACT ON DESIGN AND PRACTICE):

Knowledge, including efficient resource use, environmental impacts, whole-life cost, reuse of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.

WK6 (NEWER PRACTICAL KNOWLEDGE):

Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.

WK7 (ENGINEER ROLE AND RESPONSIBILITY IN SOCIETY):

Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.

WK8 (CRITICAL THINKING AND CREATIVITY):

Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.

WK9 (ETHICS AND DIVERSITY):

Ethics, inclusive behavior and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO 1 -

- Shall pursue higher education and research, or have a successful career in industries or as entrepreneurs.

PEO 2 -

- Shall have the ability and attitude to adapt to emerging technological changes.

PEO 3 -

- Shall exhibit leadership abilities, professional ethics, communication skills, interpersonal skills and life-long learning.

PROGRAM OUTCOMES (POS)

PO1 -ENGINEERING KNOWLEDGE:

Apply knowledge of mathematics, natural science,computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2- PROBLEM ANALYSIS:

Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO3- DESIGN/DEVELOPMENT OF SOLUTIONS:

Design creative solutions forcomplex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, netzero carbon, culture, society and environment as required. (WK5)

PO4 -CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:

Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8)

PO5 -ENGINEERING TOOL USAGE:

Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO6 -THE ENGINEER AND THE WORLD:

Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7)

PO7 -ETHICS:

Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO8- INDIVIDUAL AND COLLABORATIVE TEAM WORK:

Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams

PO9 -COMMUNICATION:

Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

PO10 -PROJECT MANAGEMENT AND FINANCE:

Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11- LIFE-LONG LEARNING:

Recognize the need for, and have the preparation and ability for
(i) independent and life-long learning
(ii) adaptability to new and emerging technologies and
(iii) critical thinking in the broadest context of technological change (WK8)

PROGRAM SPECIFIC OBJECTIVE (PSOS)

Students of the Electronics and Communication Engineering Program

PSO 1 - Shall have Potential to analyze, design, synthesize and provide technical solutions in the field of VLSI, Embedded Systems, Communication, Networking and Real Time Processing

PSO 2 - Shall exhibit leadership skills and pursue entrepreneurship and contribute in the field of Electronics and Communication Engineering.

PRINCIPAL'S MESSAGE

Dr. S. Shanthi M.E , Ph.D

"Success begins when we bravely pursue our dreams".

It is with great pleasure that we welcome another promising semester at CARE College of Engineering. Each new academic term presents an opportunity to refresh our goals, broaden our perspectives, and recommit ourselves to excellence in education, research, and personal growth.

This semester offers a valuable platform to expand knowledge, explore innovative ideas, and strengthen collaboration among students, faculty, and staff. A wide range of activities—including guest lectures, workshops, departmental programs, and student-driven initiatives—have been planned to encourage active participation and experiential learning.

I encourage everyone to make the most of these opportunities and contribute positively to our academic community. Let us move forward with enthusiasm, dedication, and a shared commitment to success. I sincerely appreciate your continued efforts and wish you all a productive and fulfilling semester ahead.

HOD'S MESSAGE

Dr.J.Jeyarani M.E , Ph.D

"Dream big,
work hard, and
make your mark in the world of ECE!"

Every step you take in your academic journey is building the foundation for a successful future. With enhanced learning experiences, hands-on research opportunities, and strong industry exposure, you are equipped to transform ideas into impactful innovations. Embrace every challenge as a chance to learn, grow, and discover your true potential in the ever-evolving field of electronics and communication engineering

Our dedicated faculty members are more than educators—they are mentors committed to your success. With their guidance and your determination, there are no limits to what you can achieve. Stay focused, stay inspired, and believe in your abilities. Together, we will continue to break barriers, set new standards, and shape the future of technology

Editor's Message

Dear Reader's

With great pride and enthusiasm, we present this edition of the **ECE Department Magazine**. This publication reflects the collective vision, creativity, and dedication of our department, and we are delighted to share the inspiring journey behind its creation.

We extend our sincere gratitude to our Esteemed **CEO** and **Principal**, **CARE College of Engineering**, for their constant encouragement and unwavering support. Their guidance has been instrumental in shaping this magazine and in fostering an environment that promotes innovation, excellence, and student development.

We would also like to express our heartfelt appreciation to the Head of the ECE Department, CARE College of Engineering, whose leadership, motivation, and commitment to academic and research excellence continue to inspire both faculty and students. Under her guidance, the department consistently strives toward new milestones.

This magazine stands as a true reflection of the hard work, enthusiasm, and teamwork of the entire ECE family. From our dedicated faculty members to our passionate students, every contribution has played a vital role in making this publication a success.

As student editors, working together on this magazine has been a rewarding and enriching experience. We are grateful to everyone who contributed their time, ideas, and efforts. We hope this edition inspires, informs, and showcases the vibrant spirit of the ECE Department.

Thank you for your continued support. We hope you enjoy reading this edition of the ECE Department Magazine.

Cheif Editors's

Jeeva. S
Jegadeswaran.R
3rd Year -ECE

NETWORKING IN DOMESTIC PLACES

INTRODUCTION

Networking in domestic places refers to the interconnection of digital devices within a home to enable communication, data sharing, and internet access. With the rapid growth of smartphones, laptops, smart TVs, and Internet of Things (IoT) devices, home networking has become an essential part of modern living. A well-designed domestic network improves convenience, productivity, entertainment, and security.

COMPONENTS OF A HOME NETWORK

A typical domestic network consists of several key components:

Modem: Converts the signal from the ISP into a form usable by home devices.

Router: Distributes the internet connection to multiple devices, either wirelessly (Wi-Fi) or through cables.

Switch (optional): Expands the number of wired connections when more ports are required.

End Devices: Smartphones, computers, smart TVs, gaming consoles, printers, and IoT devices such as smart lights and cameras.

TYPES OF DOMESTIC NETWORKING

Wired Networking (Ethernet):

Uses Ethernet cables to connect devices. It offers high speed, low latency, and stable connections, making it ideal for desktops, gaming consoles, and smart TVs.

Wireless Networking (Wi-Fi):

The most common form of home networking. Wi-Fi provides mobility and ease of installation, allowing devices to connect without physical cables.

Hybrid Networking:

A combination of wired and wireless connections, balancing performance and flexibility.

APPLICATIONS OF HOME NETWORKING

Internet Access: Enables browsing, online learning, remote work, and communication.
Entertainment: Supports streaming services, online gaming, and media sharing across devices.
Smart Homes: Connects smart appliances, lighting systems, security cameras, and voice assistants.

SECURITY IN DOMESTIC NETWORKS

Security is a critical aspect of home networking.

Common practices include:

- Using strong Wi-Fi passwords and modern encryption standards (WPA2/WPA3).
- Changing default router usernames and passwords.
- Keeping router firmware updated.
- Enabling firewalls and, if required, parental controls to restrict content access.

CHALLENGES AND SOLUTIONS

Limited Coverage: Solved by using Wi-Fi extenders or mesh networking systems.
Network Congestion: Managed by upgrading routers or using Quality of Service (QoS) settings.
Security Threats: Reduced through proper configuration and regular updates.

CONCLUSION

Networking in domestic places has evolved from a simple internet connection to a complex system supporting smart living. A properly planned home network enhances comfort, efficiency, and security. As technology continues to advance, domestic networking will play an even more important role in everyday life, forming the backbone of connected and intelligent homes.

Aswin.K
ECE - 3rd year

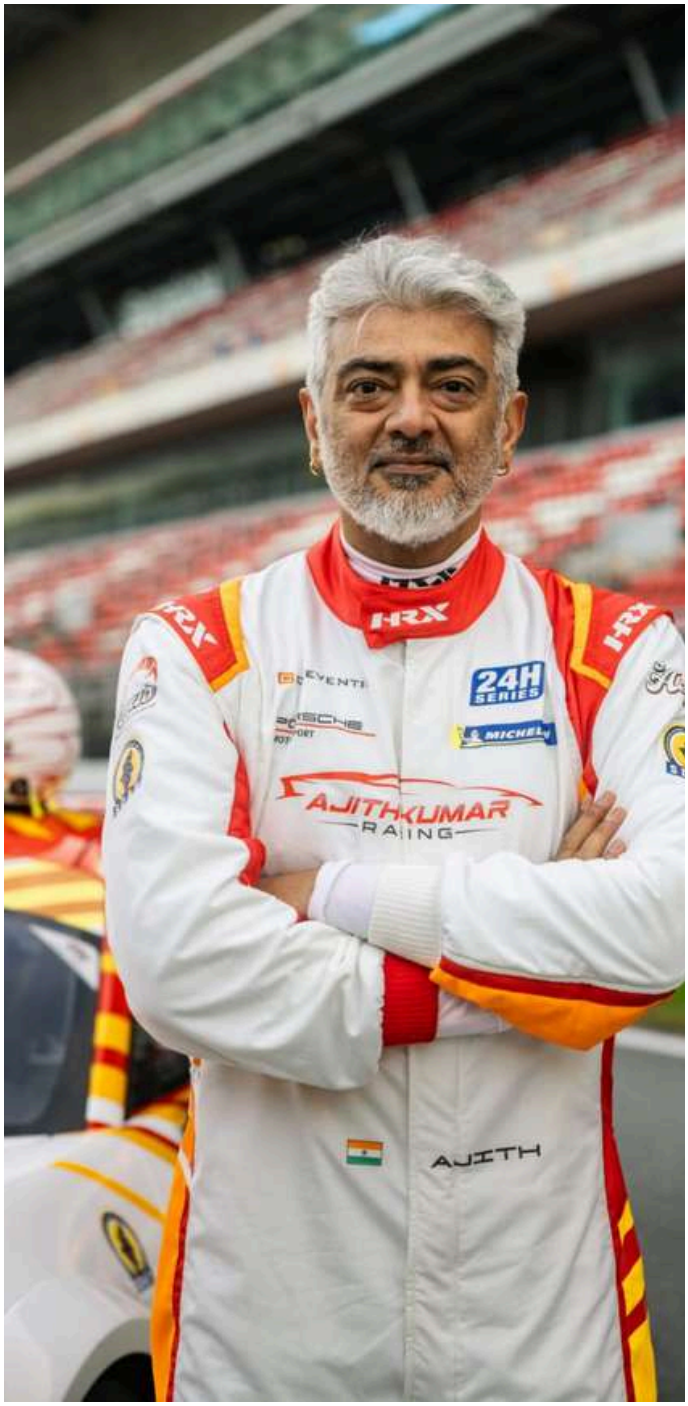
THE GENTLEMAN RACER OF TAMIL CINEMA

THE GENTLEMAN RACER OF TAMIL CINEMA

Tamil cinema star Ajith Kumar was conferred with the Padma Bhushan, India's third-highest civilian award, in a grand ceremony held at the Rashtrapati Bhavan in New Delhi on April 28. President Droupadi Murmu presented the prestigious honour to the actor, recognising his significant contributions to Indian cinema over a career spanning more than 30 years.

Ajith, who was among the 19 Padma Bhushan recipients announced by the Union Government in January, was spotted at the Chennai airport earlier in the day, accompanied by his family. Images and videos of their departure quickly made waves on social media, underlining his continued popularity.

Having made his first screen appearance in 1990 with En Veedu En Kanavar, Ajith debuted as a lead in 1993's Amaravathi. Initially known for his romantic roles, he seamlessly transitioned into action cinema in the early 2000s with films such as Amarkalam, Dheena, and Citizen. His performances in Varalaaru, Billa, and Mankatha solidified his place as a top-tier star in Tamil cinema.



Besides his illustrious career as one of Tamil cinema's leading actors, Ajith Kumar is also a highly respected and passionate racing driver. He has competed on major racing circuits across India, including Chennai, Mumbai, and Delhi, and is among the few Indians to have participated in FIA-recognised international championships in countries such as Germany and Malaysia. Ajith began his professional motorsport journey with a one-off appearance in the Formula Maruti Championship in 2002, followed by a full season in the Formula BMW Asia Championship in 2003. He later returned to racing in 2010 by competing in the FIA Formula Two Championship after a brief sabbatical.

In 2025, after a 15-year gap, Ajith made a remarkable comeback by launching his own team, Ajith Kumar Racing, and competing in the prestigious 24H Series, where his team secured a podium finish and earned international recognition. The same year, he was honoured with the Padma Bhushan for his outstanding contribution to Indian cinema, marking over three decades of excellence in film.

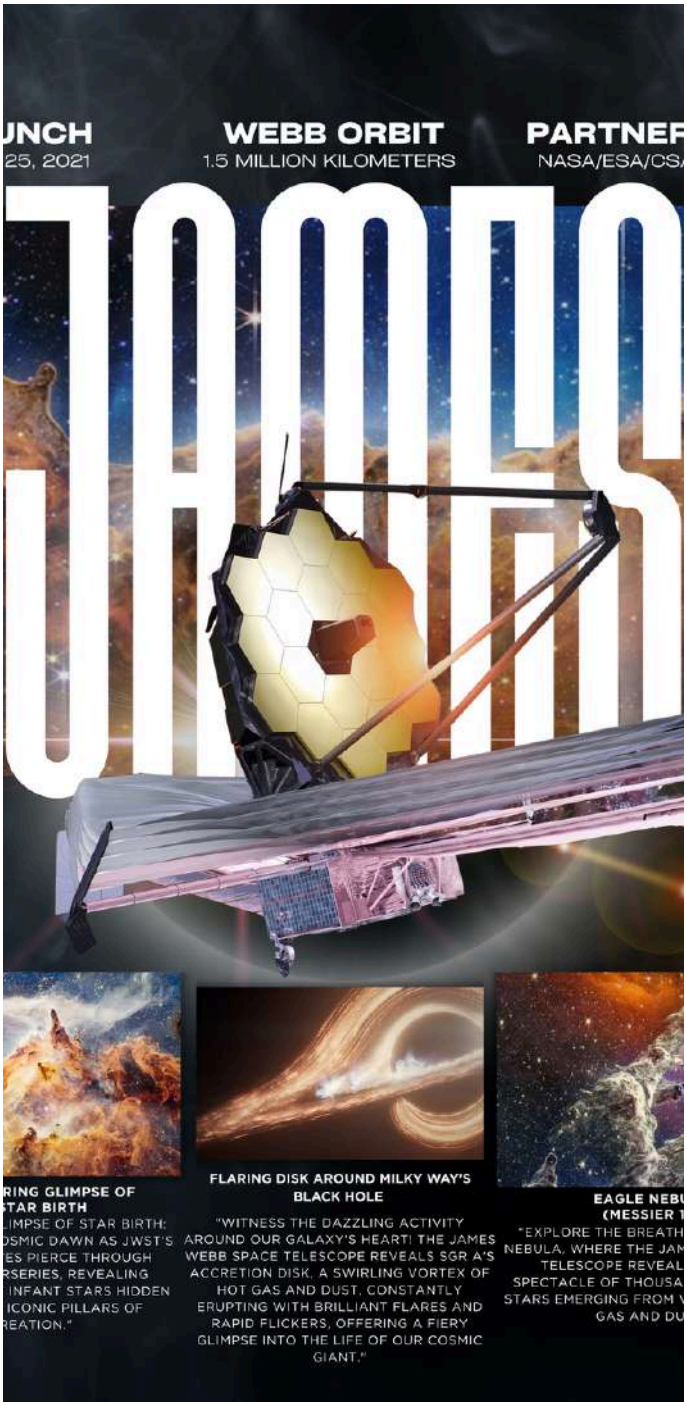
Tamil selvan .T
ECE- 3rd year

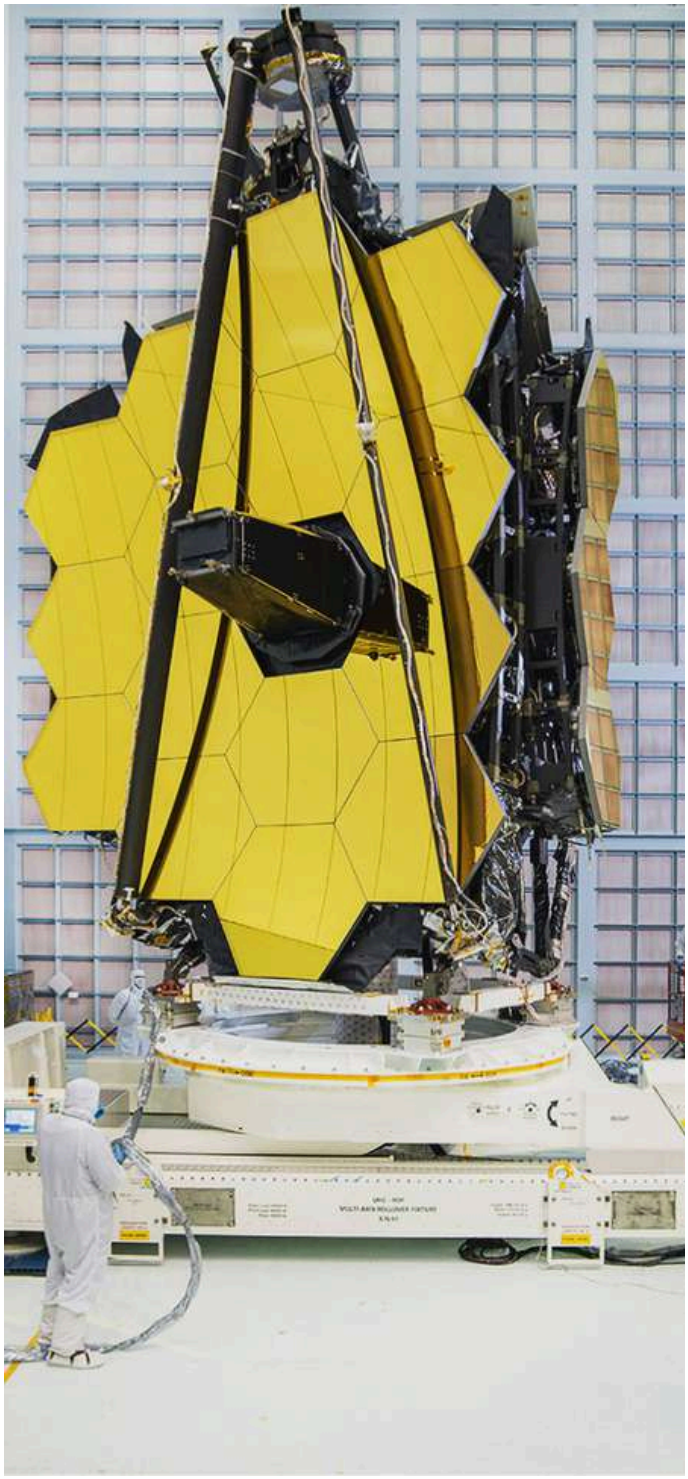
JAMES WEBB SPACE TELESCOPE (JWST)

The James Webb Space Telescope (JWST) is one of the most ambitious and powerful space observatories ever built, marking a major breakthrough in humanity's exploration of the universe. Developed through an international partnership between NASA, ESA, and CSA, Webb was launched on December 25, 2021, with the mission of studying the cosmos in ways never before possible. Designed to observe the universe in infrared light, JWST allows scientists to uncover hidden cosmic structures and phenomena that were beyond the reach of earlier telescopes.

Orbit and Technology

Positioned nearly 1.5 million kilometers from Earth at the second Lagrange point (L2), the James Webb Space Telescope operates in a stable and cold environment ideal for infrared observations. Its 6.5-meter gold-coated primary mirror, the largest ever sent into space, works in combination with advanced scientific instruments to capture extremely faint signals from distant stars and galaxies. This sophisticated design enables Webb to observe objects formed shortly after the Big Bang.





Star Formation and Galaxies

One of JWST's primary goals is to study the birth of stars and galaxies. By peering through thick clouds of dust and gas, the telescope reveals stellar nurseries where new stars are forming. These observations provide valuable insights into how galaxies evolve over billions of years and help scientists understand the processes that shaped the early universe.

Black Holes and Extreme Environments

The James Webb Space Telescope has also offered remarkable views of black holes and their surrounding environments. Observations of swirling accretion disks and sudden energy flares around supermassive black holes help astronomers study extreme gravitational forces. These discoveries deepen our understanding of how black holes grow and influence the galaxies around them.

Conclusion

More than a telescope, the James Webb Space Telescope symbolizes human curiosity and scientific ambition. Its discoveries expand our understanding of the universe and inspire future scientists. As its mission continues, JWST is reshaping how we view space, time, and cosmic origins.

Jeeva .S
ECE- 3rd year

INSPIRING LEADERSHIP IN ELECTRONICS AND COMMUNICATION ENGINEERING

An Exclusive Interview with the Head of the Department

About the HoD

Prof. **Dr.J.Jeyarani M.E,Ph.D**, Head of the Department of Electronics and Communication Engineering, is an accomplished academician, researcher, and mentor with extensive experience in teaching, research, and academic leadership. With a strong foundation in core electronics and a vision for technological advancement, **Dr.J.Jeyarani M.E,Ph.D** has consistently guided students and faculty towards excellence in innovation, research, and industry collaboration. Under her leadership, the department has strengthened its focus on emerging technologies, interdisciplinary learning, and practical skill development.

In Conversation with the HoD – Department of ECE

Q1: What inspired you to choose Electronics and Communication Engineering?

HoD:

Electronics and Communication Engineering has always fascinated me because of its transformative impact on society. The evolution of communication technologies and the ability of electronic systems to solve real-world problems inspired me to pursue this field. ECE offers endless opportunities for innovation and meaningful contribution to technological progress.

Q2: How has ECE evolved in recent years?

HoD:

The field has evolved significantly with the integration of Artificial Intelligence, IoT, advanced semiconductor technologies, and next-generation wireless communication systems integrating 6G and beyond . ECE today is highly interdisciplinary and plays a key role in smart infrastructure, automation, healthcare devices, and digital transformation and without electronics human life is un imaginable.

Q3: Which core subjects should ECE students focus on strongly?

HoD:

Students must build a strong foundation in Signals and Systems, Analog and Digital Electronics, Communication Systems, Microprocessors and Microcontrollers, VLSI Design, and Electromagnetic Theory. These core subjects are essential for mastering advanced applications.

Q4: What emerging technologies should ECE students prepare

HoD:

Students should prepare for AI-integrated systems, IoT applications, Embedded Systems, VLSI and Semiconductor Technology, and advancements in 5G and 6G communication. These technologies are shaping the future of engineering industries.

Q5: Which areas of ECE are you most passionate about?

HoD:

I am particularly passionate about wireless communication especially using optical frequencies. Spectrum issues, licenses and security issues are resolved while we go for wireless optics an emerging trend in photonics.

Q6: What are your current research interests?

HoD:

My research focuses on Free space optics to provide solutions for last mile applications where integration of high data with RF is possible for end users. IoT integration with optics is another area where I am trying with quantum computing with FSO.

Q7: What technical skills should students develop during their undergraduate studies?

HoD:

Students should strengthen their programming skills, gain hands-on experience with hardware platforms, learn simulation tools, and develop practical problem-solving abilities. A balance between theory and implementation is crucial. I insist students to observe their surroundings and find the pain points and try to solve using engineering knowledge.

Q8: How can students prepare effectively for internships and industry projects?

HoD:

Active participation in projects, workshops, hackathons, and certification programs helps students gain industry exposure. Building a strong project portfolio and improving communication skills are equally important.

Q9: What common challenges do ECE students face?

HoD:

Students often face difficulties in understanding mathematical concepts and practical implementation. Clear fundamentals, regular practice, and guidance from mentors can help them overcome these challenges.

Q10: What advice would you give to students who are confused about career paths?

HoD:

Explore different domains through projects and internships before making a decision. Identify your strengths and interests. ECE offers diverse career opportunities in core electronics, software, research, and entrepreneurship. Continuous learning and dedication are the keys to success.

"Electronics and Communication Engineering is not just a discipline; it is the driving force behind modern technological innovation."

Jegadeswaran R
ECE- 3rd year

THE POWER OF CONSISTENCY

Vijay's life reinforces a hard truth most people avoid: consistency matters more than intensity. You don't need to study 10 hours one day and burn out the next. You need 2–3 hours daily, without excuses. Ordinary days, repeated for years, create extraordinary results.

Another key lesson is emotional discipline. Vijay rarely reacts publicly, even when criticized. In daily life, this translates to not letting anger, jealousy, or frustration decide your actions. When emotions control you, progress stops. When you control emotions, momentum builds.

His career also shows the value of patience. He didn't become a top actor overnight. Growth was gradual, sometimes slow. Daily life works the same way. If you expect instant results—from learning a skill, improving grades, or getting fit—you'll quit early. If you accept slow progress, you'll last longer than most people.

Vijay's quiet lifestyle teaches focus over distraction. Less scrolling, less talking, fewer unnecessary outings—more energy saved for meaningful work. Most people fail not because they lack ability, but because their attention is scattered everywhere.

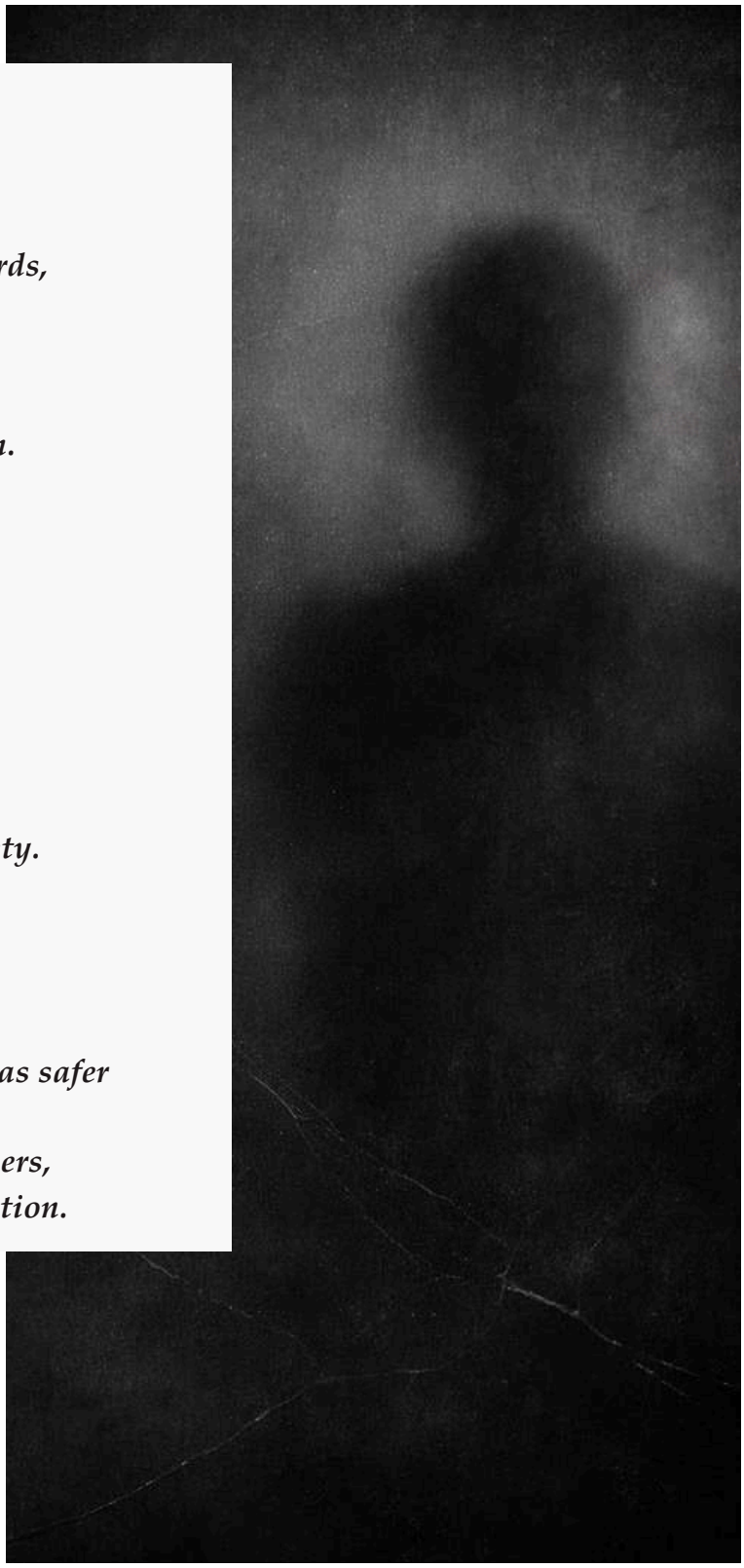
Another underrated quality is self-respect. Vijay protects his image by choosing when to speak and when to stay silent. In daily life, self-respect means setting boundaries, saying no to useless commitments, and not lowering your standards just to please others.

He also shows responsibility with influence. Whether in films or public actions, he understands that actions have consequences. Daily life lesson: take ownership. Blaming teachers, parents, luck, or society won't move you forward. Responsibility will.

"Kill them with your success bury them with your smile."

Muthukumar .T
ECE - 3rd year

Where The Gaze Never Fell



You saw the devil in yourself,
So you named me evil.

You saw the lies in your own words,
So you blamed others.

You never looked inward,
Mistaking kindness for deception.

You never once saw the truth,
Yet you defined all the laws.

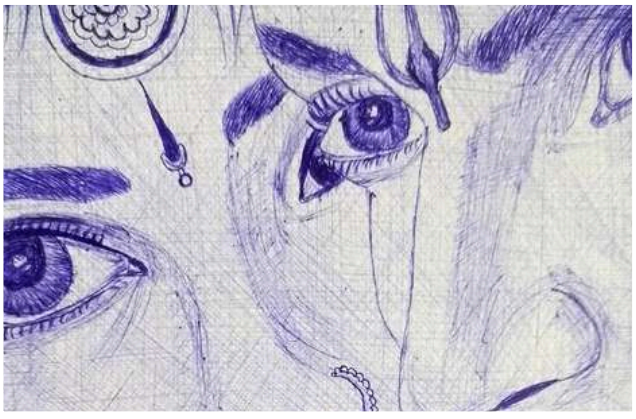
Stubborn in your ways,
Calling others wicked.

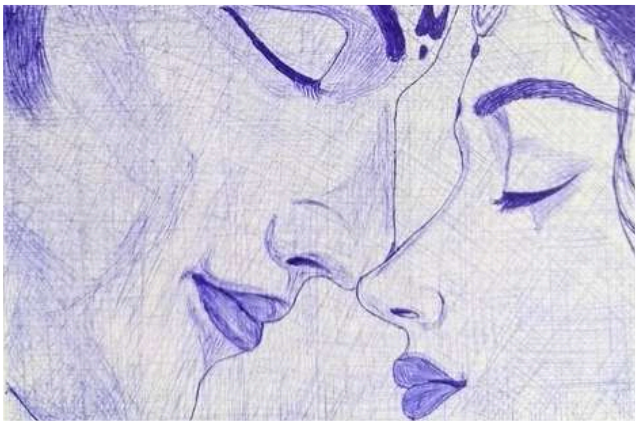
You never once saw yourself,
Mistaking your illusions for safety.

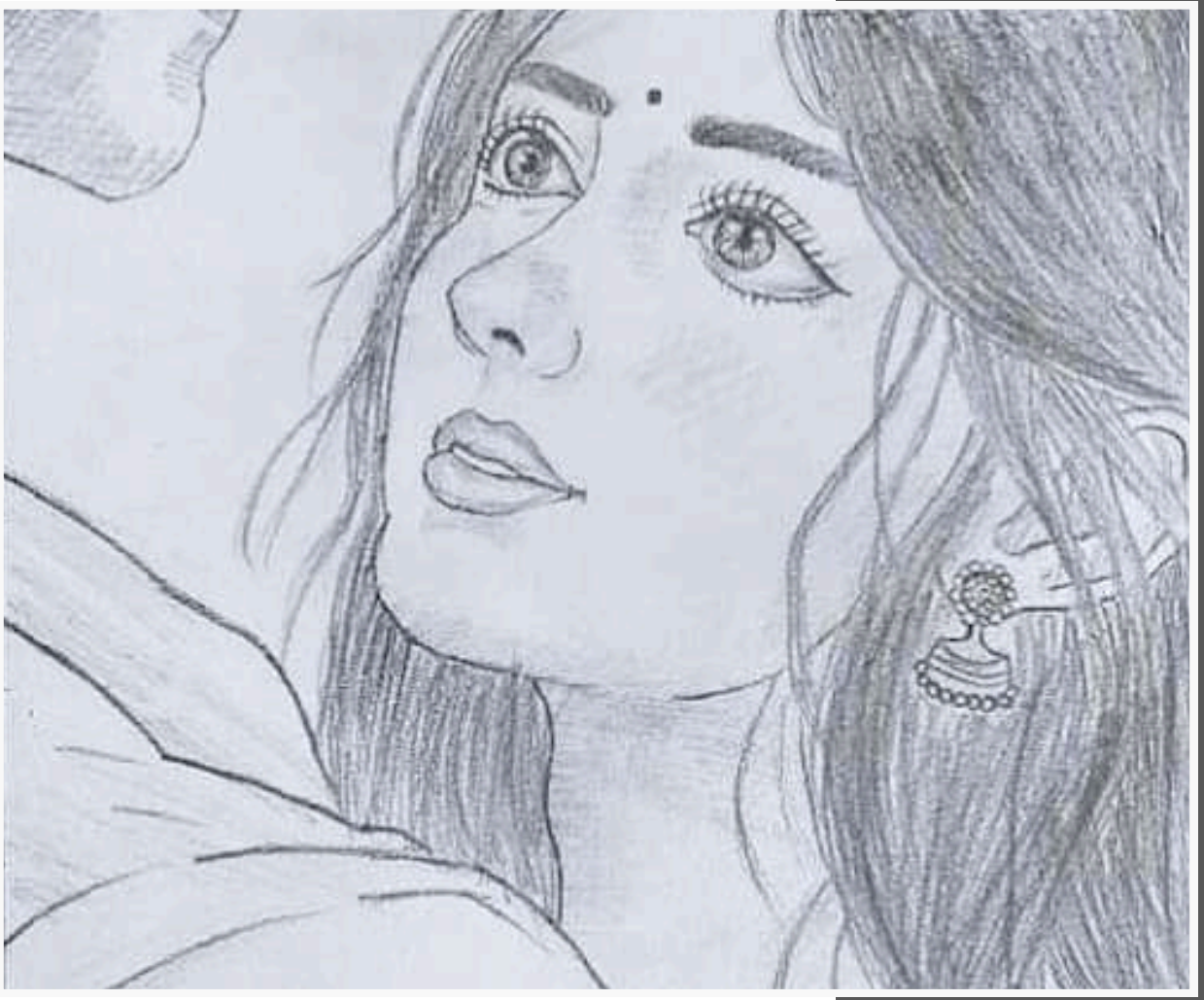
You spoke in the name of love,
Only to destroy it all.

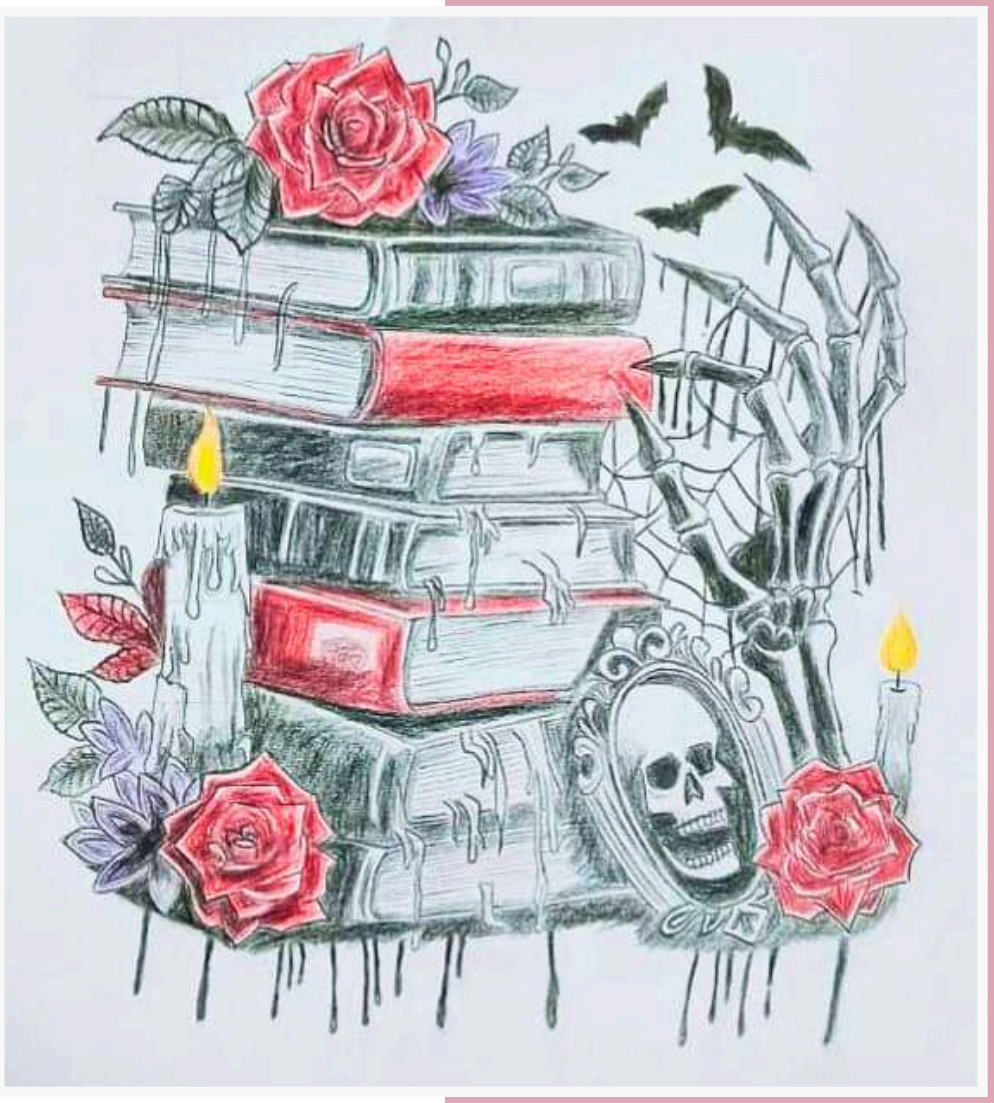
Believing hiding from yourself was safer
than being honest,
You pushed your doubts onto others,
Instead of facing your own reflection.

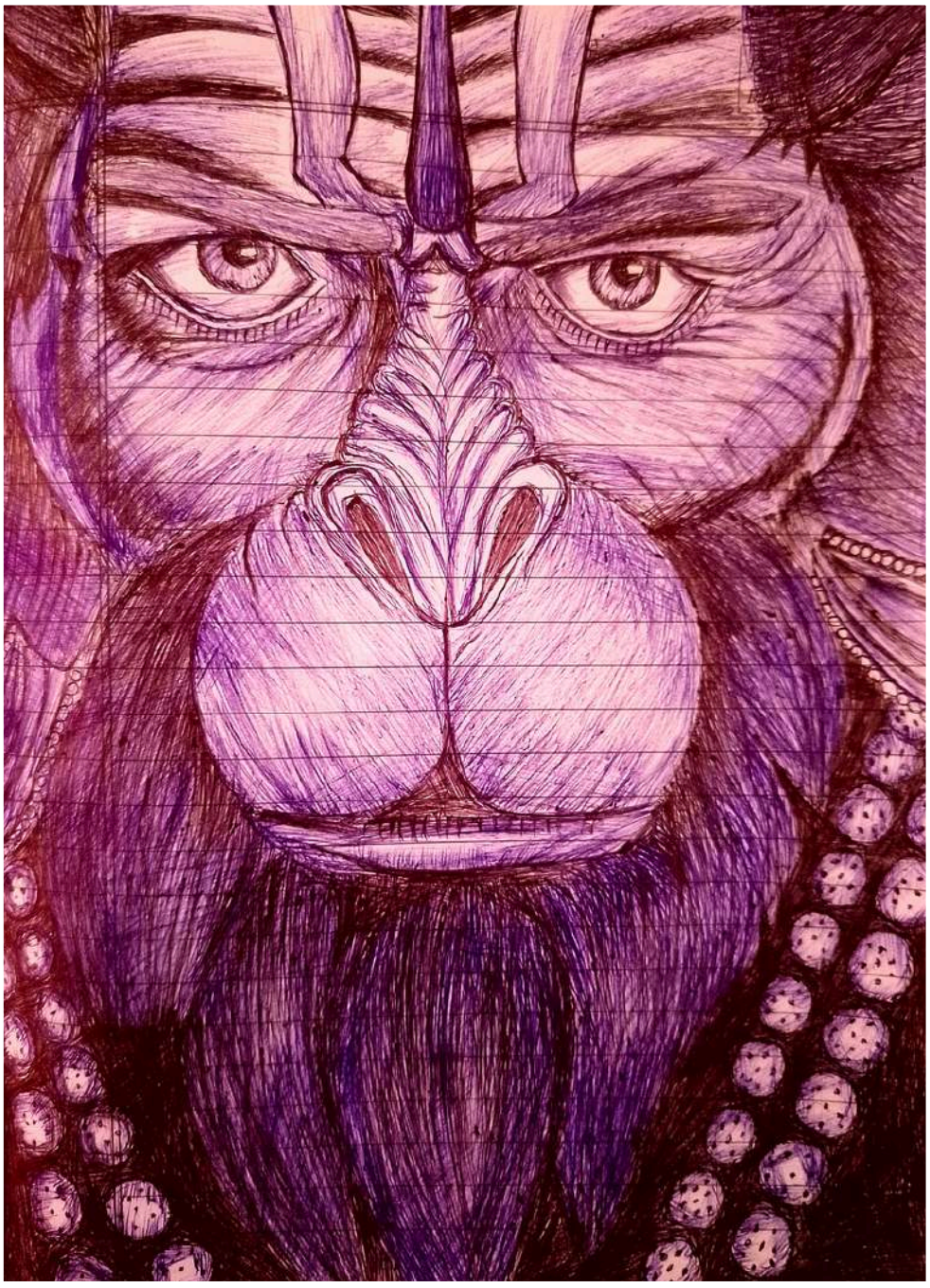
Subha Shree .K
ECE - 3rd year











Priya .M
ECE- 3rd year

Varshini .S
ECE- 3rd year

DHARSHAN N S
ECE- 2nd year

Heerthana.M
ECE- 2nd year

Ms. Asra Jabeen H
Assistant Professor -ECE

THE POWER OF BEING AVERAGE – MY PERSONAL EXPERIENCE

In today's competitive world, many people believe that only toppers or extraordinary students can achieve success. However, my personal experience has taught me that being an average student also has its own power.

During my student days, I was not always the top scorer in class. There were many students who performed better academically. At times, I felt discouraged, thinking that I needed to be perfect to succeed. But gradually I realized that success is not only about marks; it is about continuous learning, effort, and perseverance.

Being average helped me stay humble and motivated to improve. Instead of comparing myself with others, I focused on developing my skills step by step. Hard work, consistency, and patience helped me grow both personally and professionally.

One important lesson I learned is that average students often develop resilience. They learn to work harder, face challenges, and never give up easily. Over time, these qualities become stronger than natural talent.

They said the world remembers
the ones who come first,
the toppers, the winners,
the names written in bold.
But no one talks about
the quiet middle row,
the student who tries again
even after a slow result.
Not the fastest runner,
not the brightest star,
just someone walking steadily
while others rush far.
Average, they call it—
as if it means small.
But they never see
the courage behind it all.
The courage to stand
after falling before,
to open the same book
and try once more.
Maybe the world cheers
for lightning and fame,
but mountains are climbed
by steps that look the same.
So if you feel ordinary,
don't let your heart shrink—
because slow rivers still reach
the mighty ocean, I think.
And one quiet day
when the noise fades away,
the "average" soul will smile...

Ms. M.Devi
Assistant Professor -ECE