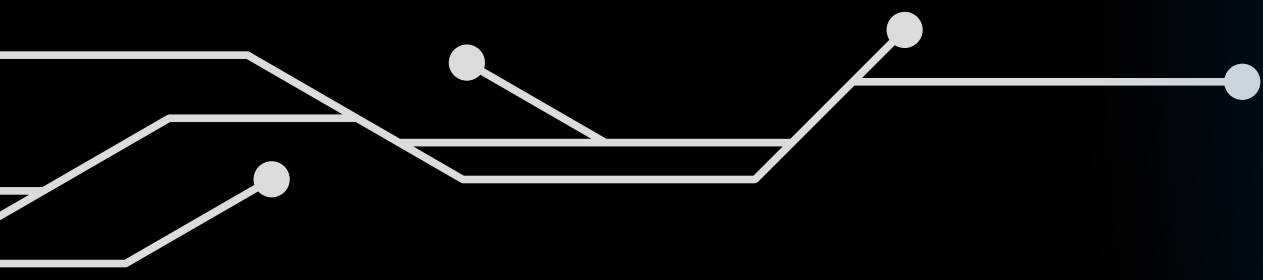


DEPARTMENT OF
INFORMATION TECHNOLOGY



IDENTITY

A HALF-YEARLY
NEWSLETTER

VOLUME 10, ISSUE 2
DECEMBER 2023



Welcoming our new HoD!

It is with great pleasure and excitement that **we welcome our very own Dr. A. Shahina**. With a **wealth of experience and a passion for applied machine learning**, she takes up a **new role as the Head of Department**, bringing fresh perspectives and inspiring leadership to guide us into a new chapter of success.

From The HOD's Desk

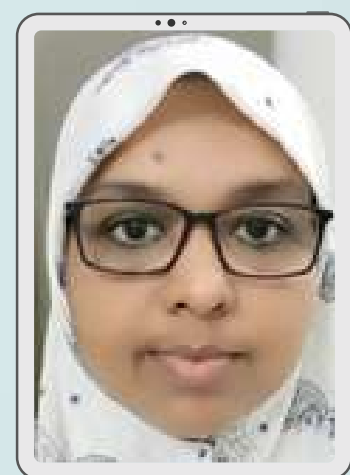
Greetings!

A warm welcome to all of you as we unveil the year-end issue of IdentITy. This edition provides you with highlights of our department's incredible growth towards the end of 2023.

The pages are packed with a wealth of information on the events like Invente 2023, IEEE day, workshops, activities of the coding club ProCode and more, hosted in the IT department as well as other exciting updates. Our students have also contributed thought-provoking articles on emerging technologies, their projects, enriching experiences, poetry, captivating artwork and sensational photography. We proudly present the placements, internships, NPTEL and IFP stats recognizing students' outstanding dedication.

We hope you share the prideful experience in these vibrant pages of IdentITy and witness the extraordinary talent, passion, and accomplishments of our department.

With best regards,
Dr. A. Shahina
 Professor and Head of Department,
 Department of Information Technology



Editorial Board's Note

The Editorial Board is thrilled to unveil the newest edition of Identity!

This edition looks back at 2023's growth and changes in the IT department along with contributions from faculties and students.

The student editors thank Dr. A. Shahina, Dr. P. Vasuki and Dr. S. Karthika for their guidance and inputs in the making of the magazine. This edition wouldn't be possible without the student editorial board's passionate effort behind the scenes.

We thank all contributors!

Wishing you a pleasant read and a Happy New Year,
Editorial Board

We welcome feedback at team-identity-ssn@ssn.edu.in

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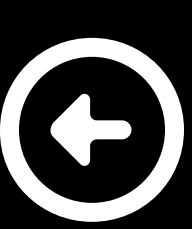
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DEPARTMENT UPDATES

Welcoming our new faculty



Dr. S. Anitha

Assistant Professor

Department of Information Technology

Education:

Dr. S. Anitha obtained her B.E in Electronics and Communication Engineering with distinction from S.A. Engineering College, Chennai in 2005. She received her M.E in CSE – Multimedia Technology from College of Engineering Guindy, Anna University, Chennai in 2010. In the year 2020, she obtained her Ph.D. degree from faculty of Information and Communication Engineering, Anna University, Chennai in the area of Medical Image processing and Deep Learning. She obtained Fellowship from the Department of Science and Technology during her PhD Programme.

Areas of Interest:

Her current areas of interest include Image Processing, Machine Learning, Deep Learning, Python Programming, C programming, and Object Oriented Programming.

To her credit, she received the Certificate of Excellence for guiding the students project competition titled “Great Mind Challenge 2010” conducted by IBM in Madras Institute of Technology, Anna University.

IOT LABORATORY

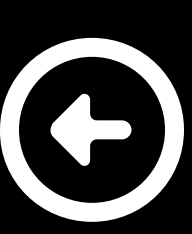
The new IoT lab of the IT department was initiated and established by **Dr. C. Aravindan**, Professor of IT, in January 2023. The lab supports the **Digital System Design and Microprocessor Lab course** for undergraduate students and aims to facilitate IoT laboratory courses for **6th-semester** B.Tech IT students. The budget was utilized to set up the lab, including the procurement of furniture and electrical fittings.



New equipment and trainer kits were purchased from the approved budget, comprising Advanced ARM processors and other peripheral devices to incorporate lab exercises. Nine computing

systems are provided for simulation experiments and IoT interface support. The coordination of lab work was overseen by **Dr. E.M. Malathy**, and **Dr. V. Sivamurugan**, Associate Professor of IT.





DEPARTMENT CHRONICLES

BEST TEACHER AWARDS

We are thrilled that the SSN Management has conferred the Best Teacher awards on two of IT department's esteemed professors—Dr. A. Shahina and Dr. S. Karthika.

This honor recognises their unwavering commitment, passion, expertise, consistent teaching and tireless efforts towards the academic endeavours of SSN and the department.

We celebrate their achievement and express our gratitude for their invaluable contribution in shaping the minds of our students.

Congratulations once again to our Best Teacher recipients!



Top: Dr. A. Shahina receives the Best Teacher award



Top: Dr. S. Karthika was also conferred the Best Teacher award

VALUE ADDED COURSE

A Value added course titled **"Introduction to Robotics and Intelligent Mobility"** was initiated by **Dr. C. Aravindan**, Professor IT with Practical session incorporating 2 Credits to all registered UG students of the course. The course coordinators **Dr. E.M.Malathy**, **Dr. V. Sivamurugan**, and **Dr. V. Thanikachalam** under took the logistics of the course and the practical sessions of the class. The course was open to all 5 th sem UG students across the department and **attracted 70 student registrations towards the course** . The online classes were conducted from **August 2023- Dec 2023**. The course was successfully conducted with examination and 38 students completed the course.



DR.VIJAY JOHN

Research Scientist

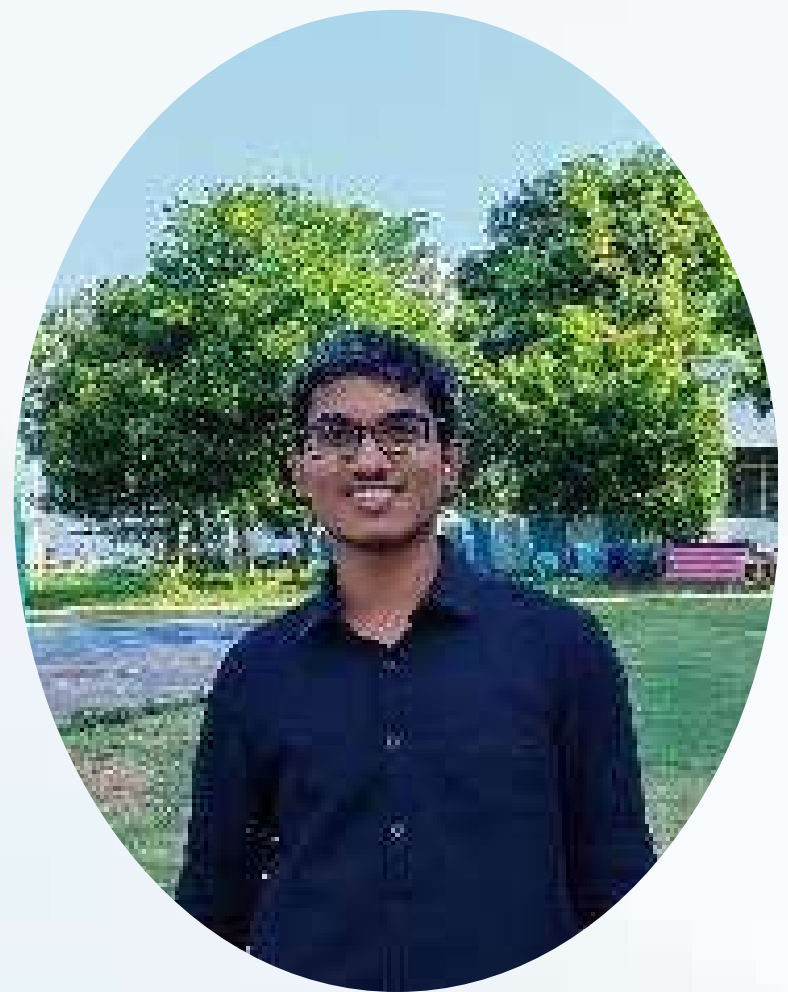
RIKEN INSTITUTE

Dr. Vijay John, Research scientist RIKEN Institute was kind enough to handle the classes from Japan every Saturday and Sunday cumulating to 45 hours of the classes. **The class covered the computer vision and machine learning concepts and students were made to understand the basics of intelligent mobility and robotics.** Segmentation and classification using deep learning gave a clear vision and enabled the practical session an easy go. Applications using generative models and vision transformers added the key learning from the course.

TESTIMONIALS

Sibiraj M from Pre-Final Year UG Student, Department of Biomedical Engineering says...

"I recently had the opportunity to attend the Value Added Course on 'Introduction to Robotics and Intelligent Mobility' offered by our college's IT department in March 2023, and it has been an enlightening experience. The course provided a comprehensive overview of cutting-edge technologies, equipping me with practical knowledge and skills in robotics and intelligent mobility. The hands-on sessions and interactive discussions fostered a dynamic learning environment, allowing me to apply theoretical concepts to real-world scenarios. The instructor exhibited a profound knowledge of the subject, especially in deep learning and image processing, igniting my curiosity in these domains. This course not only broadened my perspective on the rapidly evolving field but also inspired a keen interest in pursuing further studies in robotics. I am grateful to the IT department for organizing such a valuable and forward-looking course that has undoubtedly enriched my academic journey."



K.V. Hemasri, Pre final year, Department of Information Technology shares that the Robotics course has been an incredibly enriching experience for me. The comprehensive content not only covered essential theoretical aspects but also provided hands-on opportunities that allowed me to apply concepts in real-world scenarios. The teaching methods were highly effective, fostering a deep understanding of robotics principles. The practical exercises were particularly insightful, enhancing my skills and preparing me for practical applications in the field. The instructors' feedback was constructive and supportive, creating a positive learning environment.

IEEE TECH UNPLUGGED 2.0

The Tech Unplugged 2.0: Placement Talks event began with Avinash's insightful presentation on the benefits of Competitive Programming (CP), engaging the audience and setting a positive tone. Sathvika moderated a lively Q&A session, with participants actively seeking clarity on CP. Harrison followed with a dynamic session on the importance of Data Structures and Algorithms (DSA) for interview success. Madumitha deftly moderated the subsequent Q&A, with participants enthusiastically discussing DSA and interview preparation. The event concluded with a heartfelt vote of thanks, expressing gratitude to all involved. The active participation of the 50 attendees highlighted the event's success as a platform for knowledge exchange and networking.

Speakers:

Avinash Karthik, Software Engineer Google
 Harrison Vijay Software Engineer Google



TALK ON RESUME PROFILE BUILDING

The timely and contemporarily much-needed talk began with Anni's captivating and enthusiastic presentation on the art of crafting a resume, personal branding, the importance of keywords, and other crucial elements in resume. Keertivaas then cleverly kicked off his speech by sharing his own resume, captivating the audience even further. Anni later continued her talk by discussing her own resume, and both speakers graciously addressed the participants' queries. They also generously shared essential tips and tricks to help the participants succeed in securing their internships. The talk provided the audience with a comprehensive understanding of the resume building process, which is vital for securing internships. The event concluded with a heartfelt Vote of Thanks, expressing gratitude to all involved, leaving the audience of over 75 participants echoing the resounding success of the talk, which truly fulfilled its purpose.

Speakers:

Keertivaas, Software Engineer,
Paypal

Anni Priscilla, Senior Associate
Business System Analyst,
Equinix

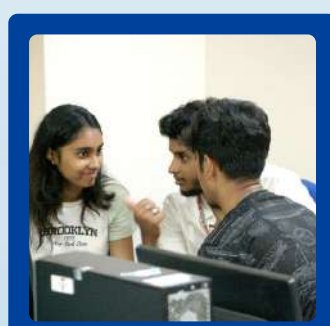
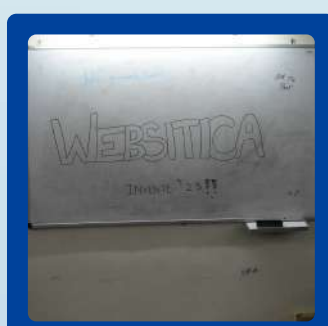
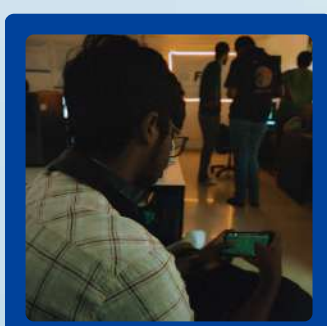


INVENTE '23

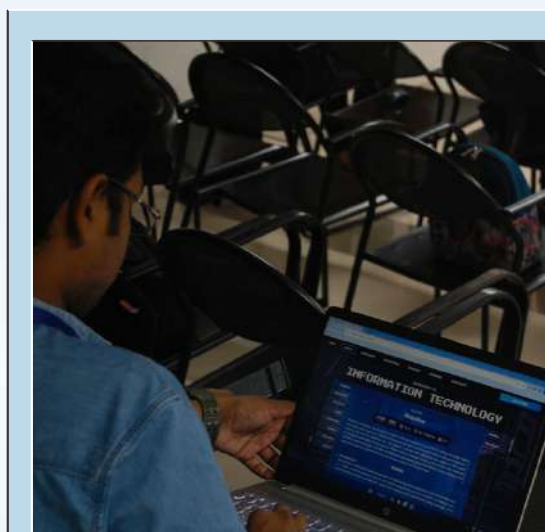
The flagship annual, nationwide **technical fest of SSN and SNUC**, Invente, since 2016, held its most recent edition on **October 6 and 7, 2023**. The techfest was sponsored by 16 organizations including Credai, Amazech and Stayflexi. A packed schedule for the two days featured cutting-edge showcases, workshops for career growth, networking and technical as well as a few non-technical competitions from different departments of SSN College of Engineering. The overarching theme was **“Techspectrum: Travelling through tech and time”**.



ML Alchemy featured a Kaggle contest for Machine Learning (ML) enthusiasts and gauged their application skills. Participants had other tests of coding and problem solving with **Codera** and **Reverse Gear**, both giving them a taste of either Competitive Programming (CP) or time constraints. While Flag Frenzy was a unique event focusing on cybersecurity skills, **Brand IT** and **IdeaXPort** challenged participants' innovative ability while forcing them to think on their feet.



The Department of Information Technology hosted 10 events—8 technical and 2 non-technical events with attractive cash prizes. Most technical events featured more than 1 round of competition with the initial screening done using general quiz questions on coding or trivia. The technical events such as **WebSitica** and **devAppCon()** focused on showcasing participants' web and app development skills in creating prototypes for real-world challenges.



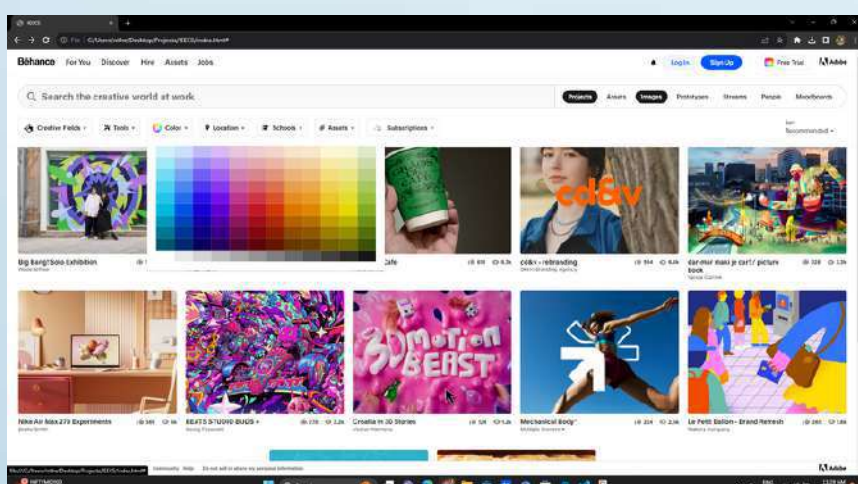
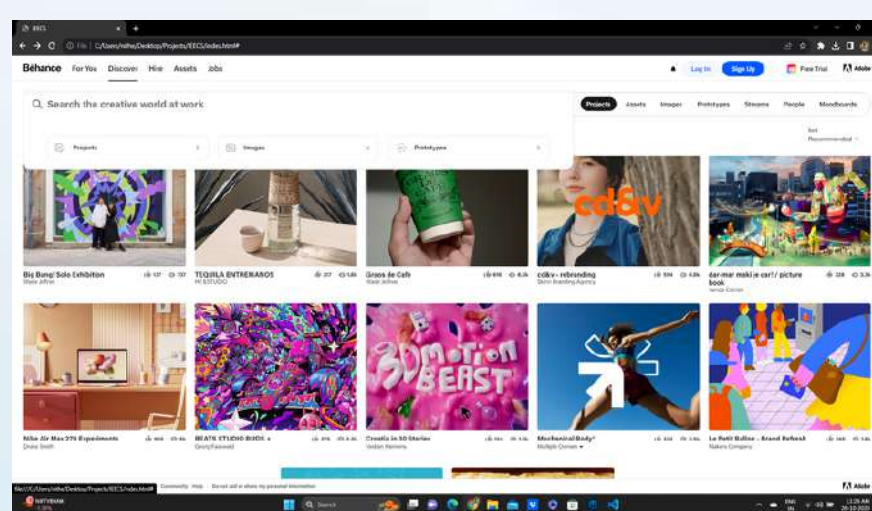
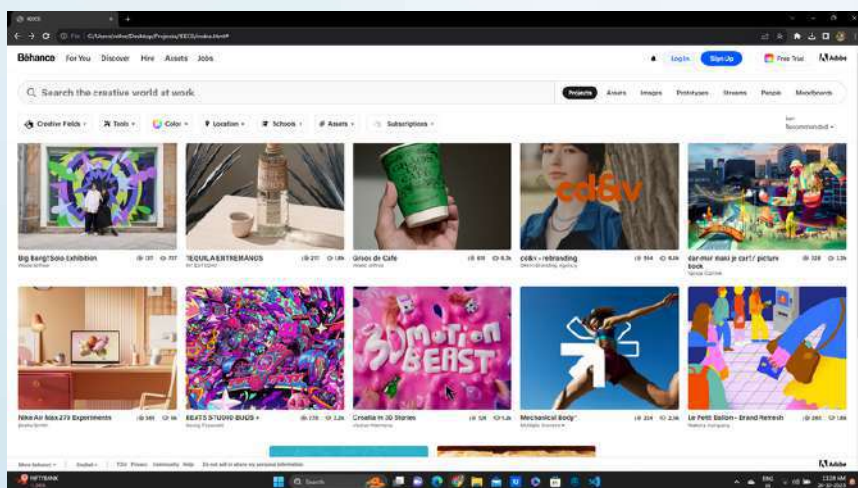
The IT department's non-tech events were **Charades**, a mix of Dumb Charades, Pictionary and Whisper Challenge each with their own twists; and **Pixel Playoff**, an e-sports competition using FIFA and Valorant. The events received satisfactorily large number of participants and gave a complete fun-filled experience for them.

IEEE DAY with IEEE Computer Society



IEEE day from the IEEE SSN Student Branch Chapter was held on October 26, 2023 and featured workshops, seminars and exciting competitions from all IEEE societies in SSN.

The **IEEE CS (Computer Society)** hosted 'Clone Craft', a beginner-friendly web development contest. During the 2-hour contest, participants were given **few web pages to replicate using frontend technology**. It challenged participants' ability to add their own twist to the web pages while using given assets and completing within stipulated time.



Example results:
(Clockwise: Full page look, dropdown search, palette and search hover)

A total of 20 teams participated and successfully made submissions. Students got time to learn and implement their solutions in real-time which is always valuable. Overall winners of IEEE day were announced based on consolidated results.

IEEE WIE Workshop - Intel OneAPI

IEEE WIE (Women In Engineering), SSN, in collaboration with Intel, organized a workshop on October 30, 2023, aimed at empowering women in technology. The "oneAPI" Workshop cum Hackathon provided a platform for female participants to delve into AI and oneAPI. The event's key highlight was the demonstrations conducted by Dr. Shriram, a certified Instructor from Intel who is also a distinguished expert in hackathons with a remarkable track record.

The workshop covered a spectrum of Intel oneAPI applications, offering insights into AI-driven developments such as AI chatbot creation and text-to-image generation. These practical demonstrations served to showcase the immense potential of AI in diverse fields, particularly in healthcare, emphasizing dermatological disease detection.

Dr. Shriram's expertise, having participated in over 70 hackathons and clinched victory in more than 50, provided an invaluable learning experience for the attendees. The event's core objective was to equip participants with essential skills and knowledge in the AI and technology domains, providing a unique opportunity for girls to upskill themselves in a rapidly evolving technological landscape.

SSN SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
IEEE Women in Engineering Madras Section presents

oneAPI

WORKSHOP CUM HACKATHON FOR GIRLS

IEEE R10 WIE CHAMPION

REGISTRATION

Register here
To participate in the workshop

SPEAKER

Dr. Shriram Vasudevan
Certified Instructor
Intel

WINNERS OF HACKATHON WILL BE RECOMMENDED FOR INTEL STUDENT AMBASSADORSHIP

30TH OCTOBER 2023 | IT DEPARTMENT SSN COLLEGE

Faculty coordinators:
Dr. S. Sasirekha: +91 6383757898
Dr. S. Karthika: +91 9500055600

Student Coordinator:
Supriya Abirami A: +91 7358503436

SSN SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
IEEE Women in Engineering Madras Section presents

oneAPI

HACKATHON FOR GIRLS

IEEE R10 WIE CHAMPION

REGISTRATION

Participate in the Hackathon
by submitting your
SDG-related Ideas before November 10th

MENTOR

Arun GK
Intel oneAPI Student Ambassador

Akshay Ramakrishnan
Intel oneAPI Ambassador

WINNERS OF HACKATHON WILL BE RECOMMENDED FOR INTEL STUDENT AMBASSADORSHIP AND WIN EXCITING CASH PRIZES

10TH NOVEMBER - 10TH DECEMBER 2023 | ONLINE

Faculty coordinators:
Dr. S. Sasirekha: +91 6383757898
Dr. S. Karthika: +91 9500055600

Student Coordinator:
Supriya Abirami A: +91 7358503436

IEEE WIE Workshop - Intel OneAPI

The occurrence has motivated the event organizers to arrange a follow-up hackathon for female participants. Each team has been assigned two mentors, Mr. Arun GK and Mr. Akshay Ramakrishnan, to ensure thorough guidance and support. A successful exchange of ideas occurred as all teams promptly engaged with their mentors to refine and enhance their projects focused on Sustainable Development Goals (SDGs). This hackathon was aimed to build on the groundwork laid by the workshop, providing a platform for participants to apply their newly acquired skills and fostering an environment conducive to creativity and innovation in the technological realm.

The event's success greatly owed to the efforts of everyone involved. As the student coordinator, I am profoundly grateful to Dr. S. Karthika for facilitating and bringing this exceptional opportunity to us. Her dedication and support were pivotal in making this event a success. Furthermore, I want to express my sincere gratitude to Dr.S.Sasirekha for her collaboration and support in organizing the event. Her guidance was instrumental in helping us navigate and coordinate the various aspects of this event.

Its impact resonates not only through the skills imparted but also in the inspiration it instilled among participants. It exemplifies the commitment to fostering diversity and excellence in the technological landscape, opening doors for more women to excel in AI and technology. The upcoming hackathon is poised to expand on these opportunities, fostering creativity and innovation among the female participants.



Top: The Student Coordinators for the event

Supriya Abirami
4th Year



ENVISION HACKATHON

The Envision Hackathon kick-started with the call for funds by the IEEE Computer Society Madras Section in September. IEEECS SSN SBC had the privilege of becoming a recipient of this funding drive that promoted awareness of the Society among the students and created an enriching experience for them.

The intense preparations for this event involved **a team of 2 faculty coordinators, 40 volunteers, 6 SSN alumni, and 19 juries.** The website went live on 1st November 2023, announcing the acceptance of submissions. In the following week, the hackathon received **78 submissions** from across the state. From these, a total of **38 teams were shortlisted** with the help of our esteemed SSN alumni. These teams were invited to the finals at SSN, held on **16th November 2023.**

The finals commenced with the inauguration where **Dr. V. E. Annamalai** (Principal of SSN), **Dr. A. Shahina** (HOD, Department of IT, SSN), and our faculty coordinators - **Dr. P. Vasuki** and **Dr. S. Karthika**, encouraged the participating teams. This was immediately followed by the second round of shortlisting where the 38 teams were divided across **5 panels.** Each of these panels was presided over by three juries from both industrial and academic backgrounds.

The **top 10 teams** from this round proceeded to the Grand Finale. We had the honour of hosting **Mr. H. R. Mohan** from **IEEE Computer Society Madras Section**, who extended his feedback as a jury and addressed the participants, wishing them success in their future endeavors. The top three teams were announced and awarded with certificates and cash prizes. Thus, the event was a grand success.





PROCEDURE INAUGURATION



The inauguration meet of ProCode, the prestigious intra-department club of the IT department, marked a significant milestone on September 20, 2023, as it welcomed an eager audience primarily consisting of second-year students. To kickstart the session, the heads of each domain within ProCode passionately shared their expertise and insights. This interactive exchange of ideas and knowledge fostered a sense of camaraderie and collaboration, setting the stage for a vibrant and productive year ahead for ProCode.

DSA/CP SESSION PREFIX SUMS AND INTRO TO DSA/CP

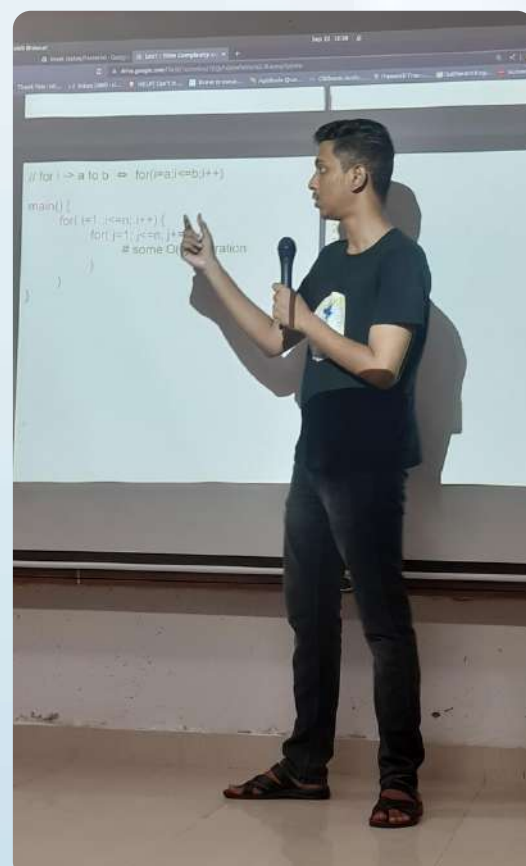
On September 22, 2023, ProCode, the IT department's club, organized an informative session dedicated to Competitive Programming (CP) and Data Structures and Algorithms (DSA). This session, led by experienced fourth-year students Saravanan J and Siddarthan K, aimed to introduce participants to the exciting world of competitive coding.



The session began with an insightful introduction to the significance of CP and DSA in the realm of computer science and software development. Attendees were also given a **detailed overview of coding platforms such as HackerRank and Codeforces**, where they were encouraged to sign up and embark on their coding journey.

The event proved to be both engaging and interactive as Saravanan and Siddarthan shared their knowledge and experiences, providing **valuable tips and strategies for tackling coding challenges** on these platforms. In the spirit of hands-on learning, participants were encouraged to start solving problems on these platforms, setting the stage for their growth as proficient programmers.

The session concluded with a lively Q&A session where doubts and queries were addressed, ensuring that attendees left with a solid foundation and newfound enthusiasm for competitive coding. This event was another step in ProCode's mission to empower students with practical skills and knowledge in the IT domain, fostering a culture of continuous learning and growth within the department.



PROCEDURE



INTRO TO WEB DEVELOPMENT

On October 13, 2023, ProCode, continued its educational journey by hosting an enlightening session on the **introductory aspects of web development**. This session served as a guiding beacon for students looking to embark on their web development journey, providing them with a roadmap to get started in this dynamic field. During the session, the participants had the opportunity to explore essential topics such as the **distinctions between frontend and**



backend development, gaining insights into popular frameworks and libraries that power modern web development, diving deep into the fascinating realm of Cascading Style Sheets (CSS), and unraveling the complexities of React, a widely-used JavaScript library for building user interfaces

By the end of the session, attendees had gained a solid foundation in these fundamental web development concepts, setting them on a path to becoming proficient web developers. The knowledge they acquired not only **broadened their horizons but also provided them with the essential skills required to create engaging websites and web applications**. This forward-thinking approach motivated students to continue their pursuit of knowledge and skill development in the ever-evolving field of web development.

In summary, the session equipped them with the knowledge and insights needed to navigate the complexities of web development and inspired them to continue their learning journey. This session was a testament to ProCode's dedication to empowering students and guiding them towards success in the field of web development.



PROCEDURE



INTRO TO APP DEVELOPMENT

In the session, participants were introduced to the **fundamentals of mobile app development**, with a particular **focus on Flutter and Swift**. The session commenced with a general overview of app development's significance in the digital age. It then delved into Flutter, an open-source framework known for its ability to create native applications for multiple platforms from a single codebase. Attendees learned about its architecture and customizable widgets.

Additionally, **Swift, Apple's programming language for iOS and macOS app development, was introduced, covering its syntax and integration with Xcode**. The session also provided teaching resources, such as tutorials, documentation, video courses, and recommended books for aspiring app developers.

Furthermore, participants gained insights into the specific app development needs of various companies, including the skills and technologies sought after by different industries. This comprehensive session served as a solid starting point for individuals looking to enter the world of app development and meet the demands of today's market.



PROCEDURE



GETTING STARTED WITH ML AND AI

During the introductory session conducted by Procode Club and hosted by **Priyanka**, the sub-head of the ML/AI Team, participants were exposed to a wide array of fundamental concepts in the **fields of Machine Learning (ML) and Artificial Intelligence (AI)**. The session commenced with an exploration of ML and its diverse applications in various domains. Attendees delved into the **essence of AI, including the concept of intelligent agents that mimic human-like decision-making processes**. This overview provided attendees with a solid foundation to understand the scope and potential of these cutting-edge technologies.

The session also **emphasised the roadmap to a rewarding career in data science, highlighting the essential skills and knowledge required for success in the field**. Attendees gained insights into the distinction between AI and ML, a crucial differentiation that clarified the boundaries and scope of these interrelated domains. Lastly, the session shed light on the significant distinction between supervised and unsupervised learning, giving attendees an initial glimpse into the different approaches used in ML. This comprehensive introduction **laid the groundwork for a deeper exploration of ML and AI**, setting the stage for a rewarding learning experience.

The following topics were covered -

- Introduction to Machine Learning (ML) and its applications.
- Understanding Artificial Intelligence (AI) and intelligent agents.
- The roadmap to a career in data science.
- Differentiating AI and ML.
- Starting to learn Machine Learning.
- The distinction between supervised and unsupervised learning.



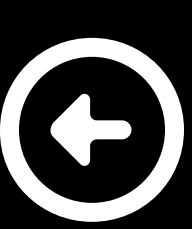
PROCEDURE AR/VR EVENT



On November 17, 2023, ProCode Club hosted a groundbreaking **Augmented Reality/Virtual Reality (AR/VR) event**, attracting a vibrant assembly of around 30 enthusiastic students. The event showcased the latest advancements in AR/VR technologies, **offering participants a hands-on experience with cutting-edge devices and applications.** ProCode Club, known for fostering tech innovation, curated an engaging agenda, featuring an intro and immersive demonstrations.

Students delved into the **realms of augmented and virtual realities, exploring diverse applications across industries.** The event provided a valuable platform for knowledge exchange and skill development, leaving attendees inspired and informed. This AR/VR event not only broadened horizons but also empowered the next generation of tech enthusiasts with practical insights, affirming ProCode Club's reputation as a catalyst for educational excellence in emerging technologies.



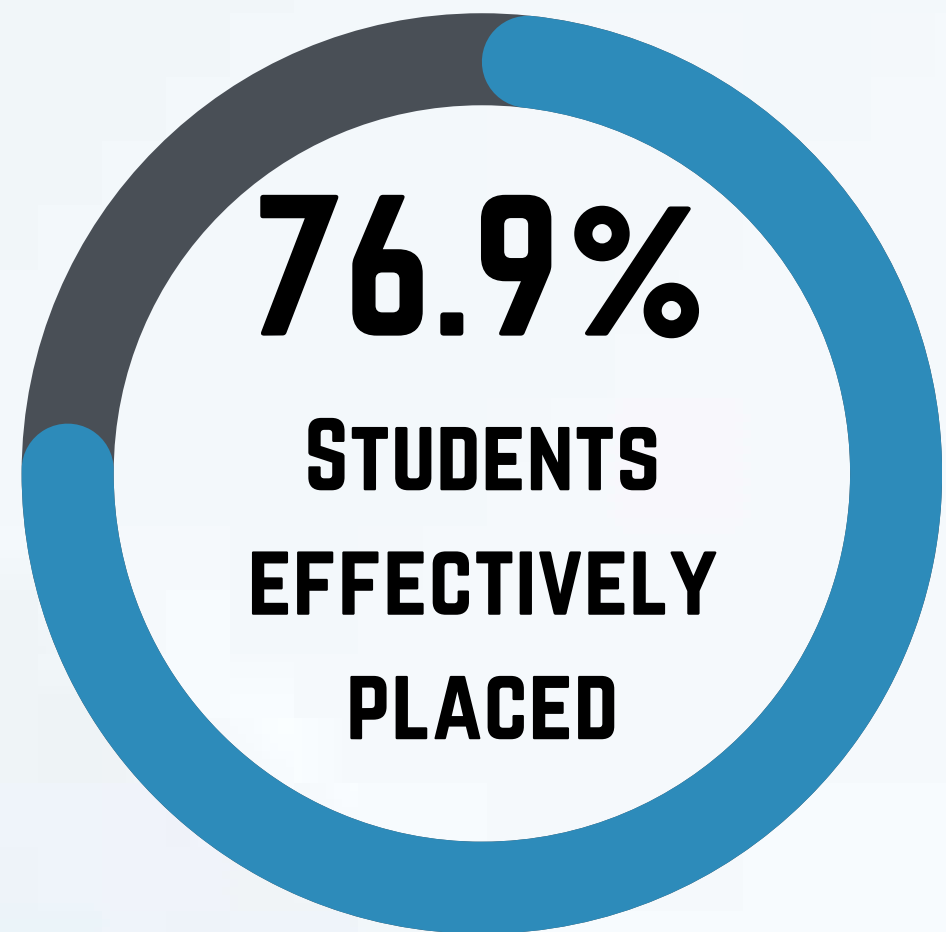


PLACEMENT STATS

Placement Trend

Batch of 2024

CTC Bracket	Placed
Marquee	4
Super Dream	39
Dream	47
Regular	0
Total	90

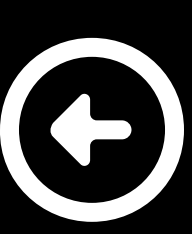


AVERAGE GROSS CTC = 11.54 LPA

Department Strength	135
Opted for higher studies	18
Opted for placements	117
Total Placed (Absolute)	90
Total Placed (%)	76.92%
Unique Companies	30

Hiring Companies

Marquee offers	PayPal, BalkanID
Super Dream offers	Citi, Fidelity, Natwest, Tiger Analytics, Tejas Networks, Yubi
Dream Offers	Comcast, Deloitte, TVS Credit, Embrizon, Zoho, Ashok Leyland, Latent View, Gen Digital, Astra Zeneca, TransUnion, CareCentra, Primesoft, Royal Sundaram, Visteon, Sagent, Hibiz, Shell, Ford

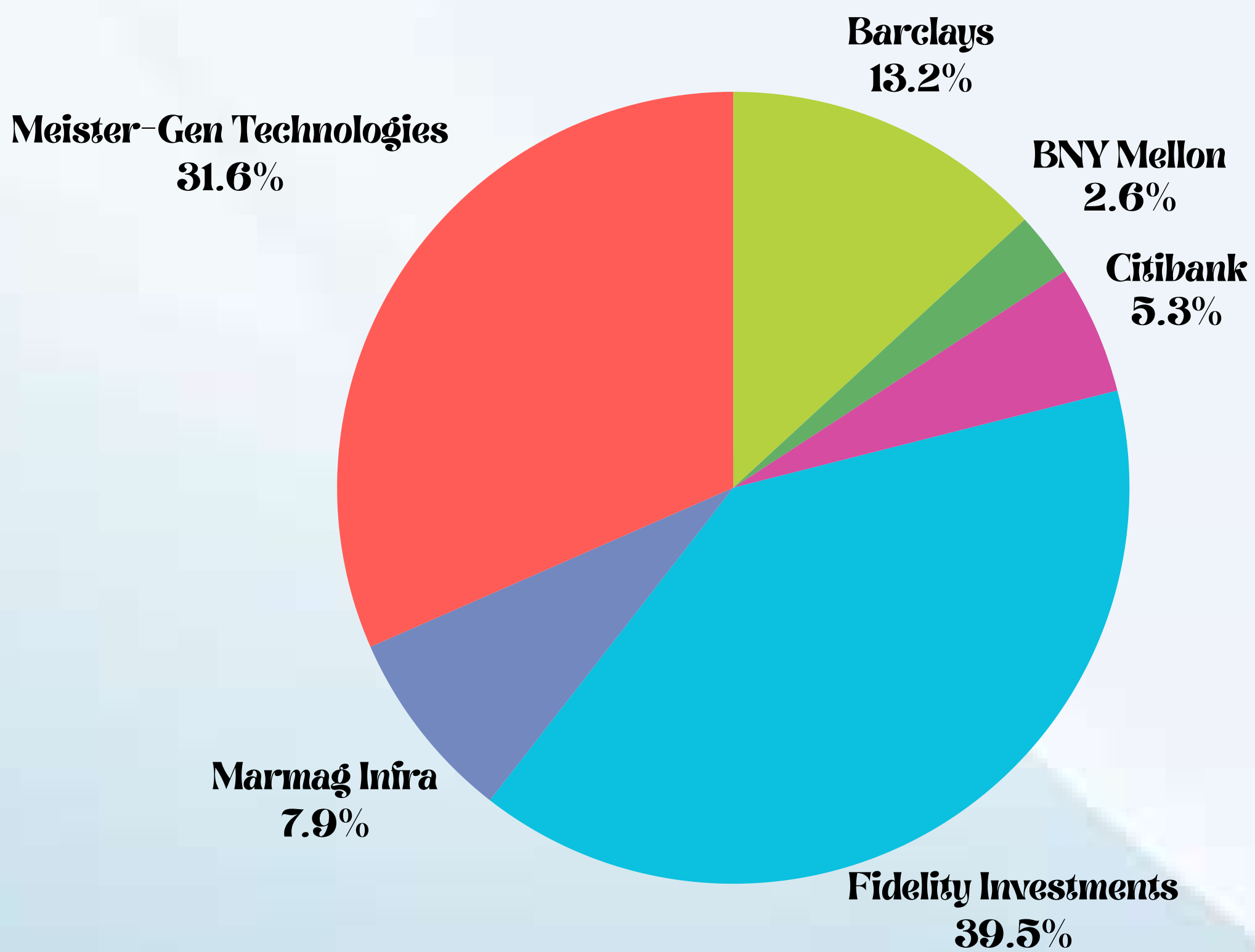


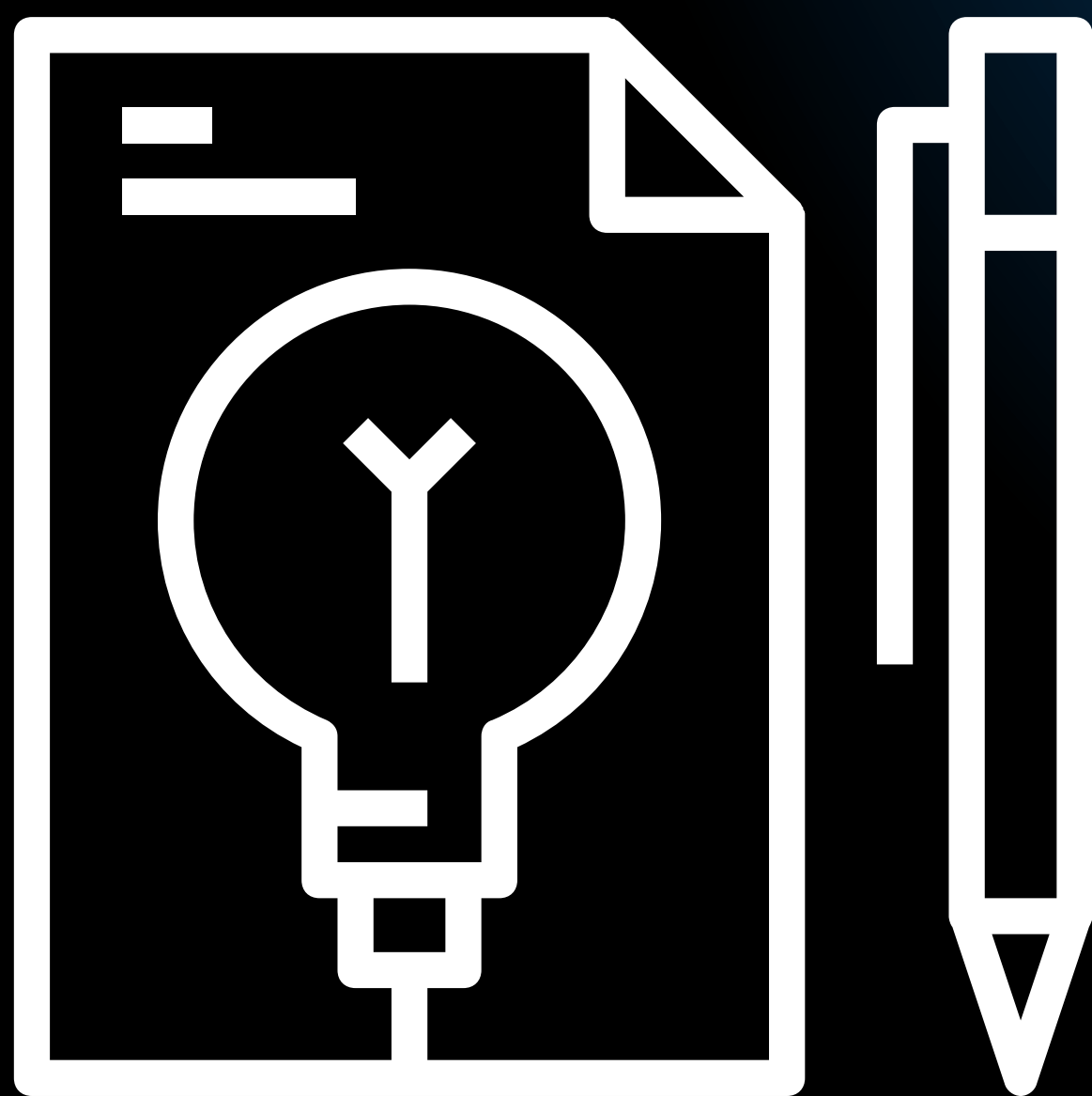
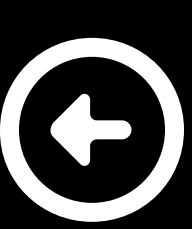
INTERNSHIP STATS

Internship Trend

Batch of 2025

COMPANIES HIRING	NO. OF OFFERS
Barclays	05
BNY Mellon	01
Citibank	02
Fidelity Investments	15
Marmag Infra	03
Meister - Gen Technologies	12
Rocketlane	06





INTERNALLY FUNDED PROJECT

Beyond Boundaries: A Closer Look at Our Internally Funded Endeavors

We thank the SSN management for their extended support and financial aid amounting 3.14 lakhs for the faculty and the budding researchers to realize their dreams.

The following student Internally Funded Projects (IFPs) have been approved in the year 2022-23:

II year:

- Padmapriya C and Madhukrishna N K received the IFP titled “**Autonomous Delivery Robot**” under the guidance of Dr. K. S. Gayathri. Budget: ₹30,000/-.
- Dunya Syed Hassan, Ritujaa B, Tanushree Panneer Selvam, and Mohit Sandeep received the IFP titled "**Drowsiness Detection and Alarm System Using Image Processing and Deep Learning**" under the guidance of Dr. K. S. Gayathri. Budget: ₹15,000/-.
- Varsha Vijay, Sindhujaa Illangovan, Shreyaa S, and Preethi Prative received the IFP titled "**LIDAR-Based Road Surface Anomaly Detection: Speed Bumps and Potholes**" under the guidance of Dr. I. Joe Louis Paul. Budget: ₹21,000/-.
- Ashwin Kumar S and Sundaresh Karthic Ganesan received the IFP titled "**Smart Mental Health Identifier**" under the guidance of Dr. E. Suganya. Budget: ₹3,000/-.
- Atchaya R, Priyadharshini R, and Keerthana N received the IFP titled "**Train Your Brain for Autism Children**" under the guidance of Dr. E. Suganya. Budget: ₹5,000/-.
- Singaram P L, Thejesswini B, and Piriyaadharshini A received the IFP titled "**GameElevate: Evaluating Badminton Player’s Performance Using Deep Reinforcement Learning**" under the guidance of Dr. K. S. Gayathri. Budget: ₹13,000/-.
- Balasubramaniam H, Nandana M, Thomas Jones Kevin J F, and Athish Pranav H H received the IFP titled "**AI-Enhanced Road Safety App for Wet Conditions**" under the guidance of Dr. K. S. Gayathri. Budget: ₹12,000/-.
- Neha Shanmitha, Soundharya Y, and Tamil Mughilan received the IFP titled "**Design and Construction of a Smart Shoe for the Visually Impaired**" under the guidance of Dr. P. Vasuki. Budget: ₹18,000/-.
- Abdullah Yassir A, Ashuwin P, Bharath P, and Lewin Jesudhas H received the IFP titled "**Gamified Approach to Develop Values and Life Skills in Children**" under the guidance of Dr. E. Suganya. Budget: ₹5,000/-.
- Hari Hara Sudhan R, Kishore P, Srinivas S, and Yuthika Anvitha S received the IFP titled "**Scholar Commute Aid**" under the guidance of Dr. R. Swathika. Budget: ₹14,000/-.
- Swetha K V and Sudhiksha N B received the IFP titled "**Student Information Management System**" under the guidance of Dr. S. Mohanavalli. Budget: ₹10,000/-.
- Shanjay Athithya G, Vignesh M, Saravanan B, and Saravanan K received the IFP titled "**Identification of Unknown Person Entering into Hostel Using Facial Recognition**" under the guidance of Dr. R. Swathika. Budget: ₹19,000/-.
- Karunanudhi, Ayyamperumal, Kathir Kaman A, and Kaushik Ananth Kumar S received the IFP titled "**Safety Enhancement Using Helmet and Number Plate Detection**" under the guidance of Dr. N. Sripriya. Budget: ₹18,000/-.
- Aravind J, Dhanush A, and Henry J M received the IFP titled "**Gatepass Management System**" under the guidance of Dr. E. Suganya. Budget: ₹17,000/-.

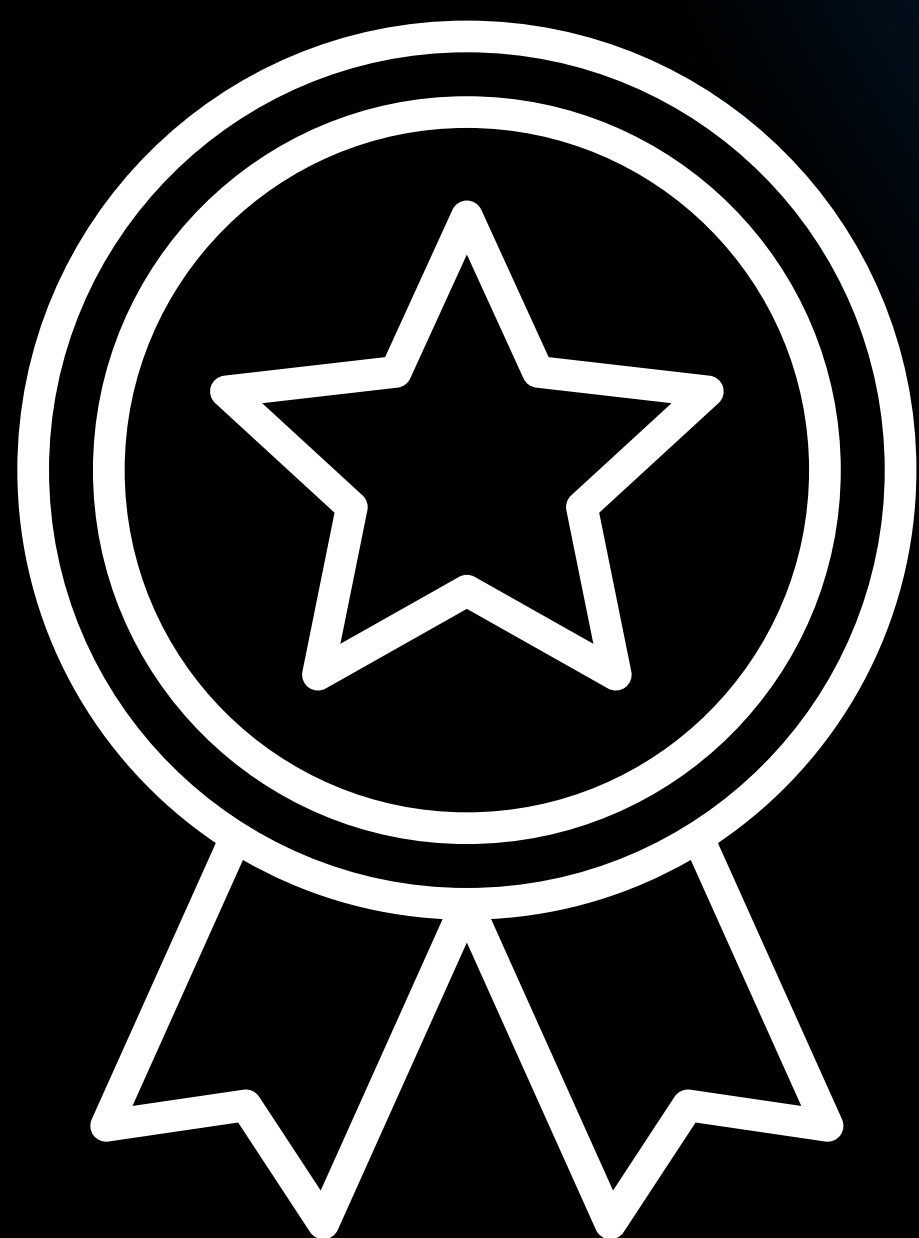
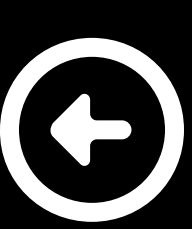
Beyond Boundaries: A Closer Look at Our Internally Funded Endeavors

III year:

- Adharsh Gurudev V, Eraiyanbu P, Harini V, Harish R M, and Kanitha S A received the IFP titled “**Smart Tamil Text Input Method For Android Systems**” under the guidance of Dr. Aravindan Chandrabose. Budget: ₹25,000/-.
- Naila Nuhmam, Priyamvadha Pradeep, Sanjeevini R, and Vasundhara B received the IFP titled “**Analysing Tremors and Gait Patterns For Early Detection of Motor Disorder Symptoms in Neurodegenerative Disease**” under the guidance of Dr. A. Shahina. Budget: ₹24,000/-.
- Amitoj Singh, Harsh Bansal, Neha Sharma, and Mohammad Rayyan received the IFP titled “**AI-based Career Counselling**” under the guidance of Dr. K. S. Gayathri. Budget: ₹10,000/-.
- Annu G, Apoorva A, and Farha Afreen received the IFP titled “**Hate Speech Detection Using Machine Learning**” under the guidance of Dr. N. Radha. Budget: ₹9,000/-.
- Prithik N, Purushothaman, Vemula Muni Karthik, and Vijaymurugan N received the IFP titled “**AgriChain**” under the guidance of Dr. Bhalaji Natarajan. Budget: ₹18,000/-.

IV and III year:

- Subhalakshmi Chellakumar, Srinivasan R, Jaya Yayadhi (IV) and Induja M C (III) received the IFP titled “**Smart Bin Using Deep Learning and IoT**” under the guidance of Dr. R. Swathika. Budget: ₹12,000/-.
- Parthiban D, Sriram J (IV) and Srujana Srinivasan, Thanuja A (III) received the IFP titled “**Distress Detection and Pavement crack classification using Deep Learning for Road Safety**” under the guidance of Dr. R. Swathika. Budget: ₹16,000/-.



NPTEL ACHIEVEMENTS

NPTEL Scoreboard

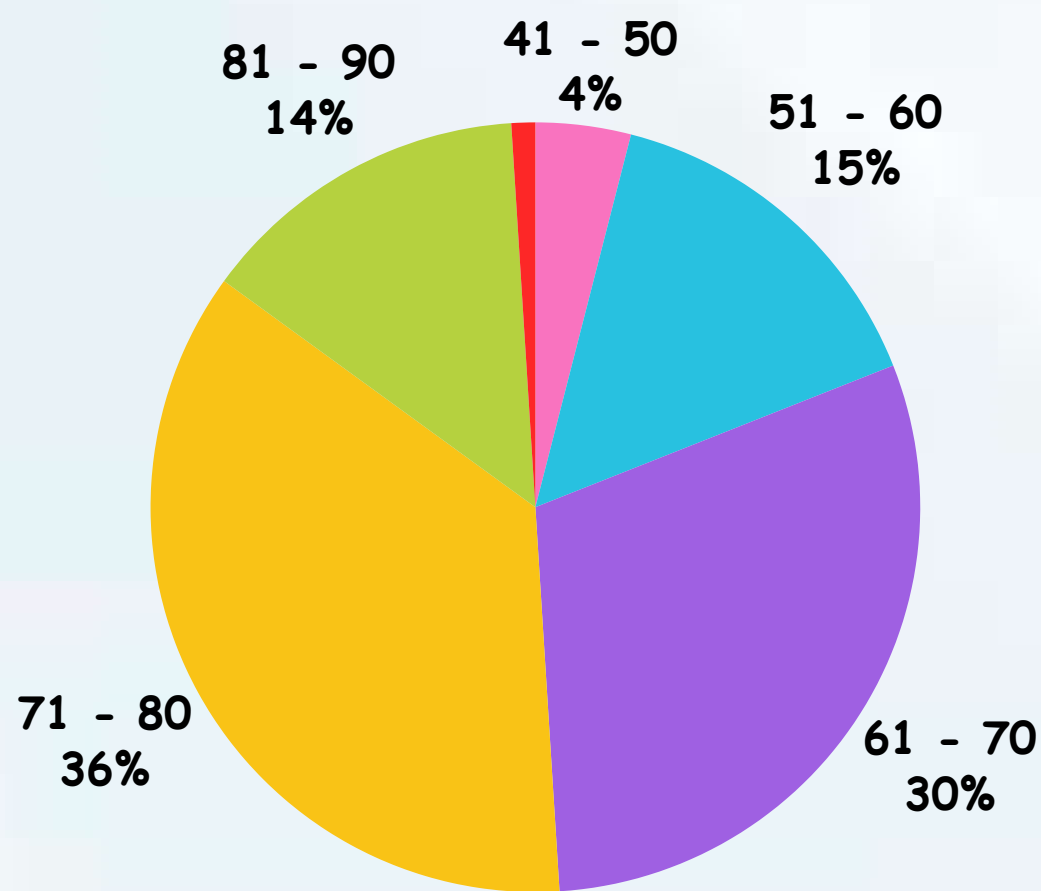
Students' Mastery and Diverse Course Selection
(July - Dec 2023 session)

Total number of students who successfully completed courses: 245

II year - 74

III year - 91

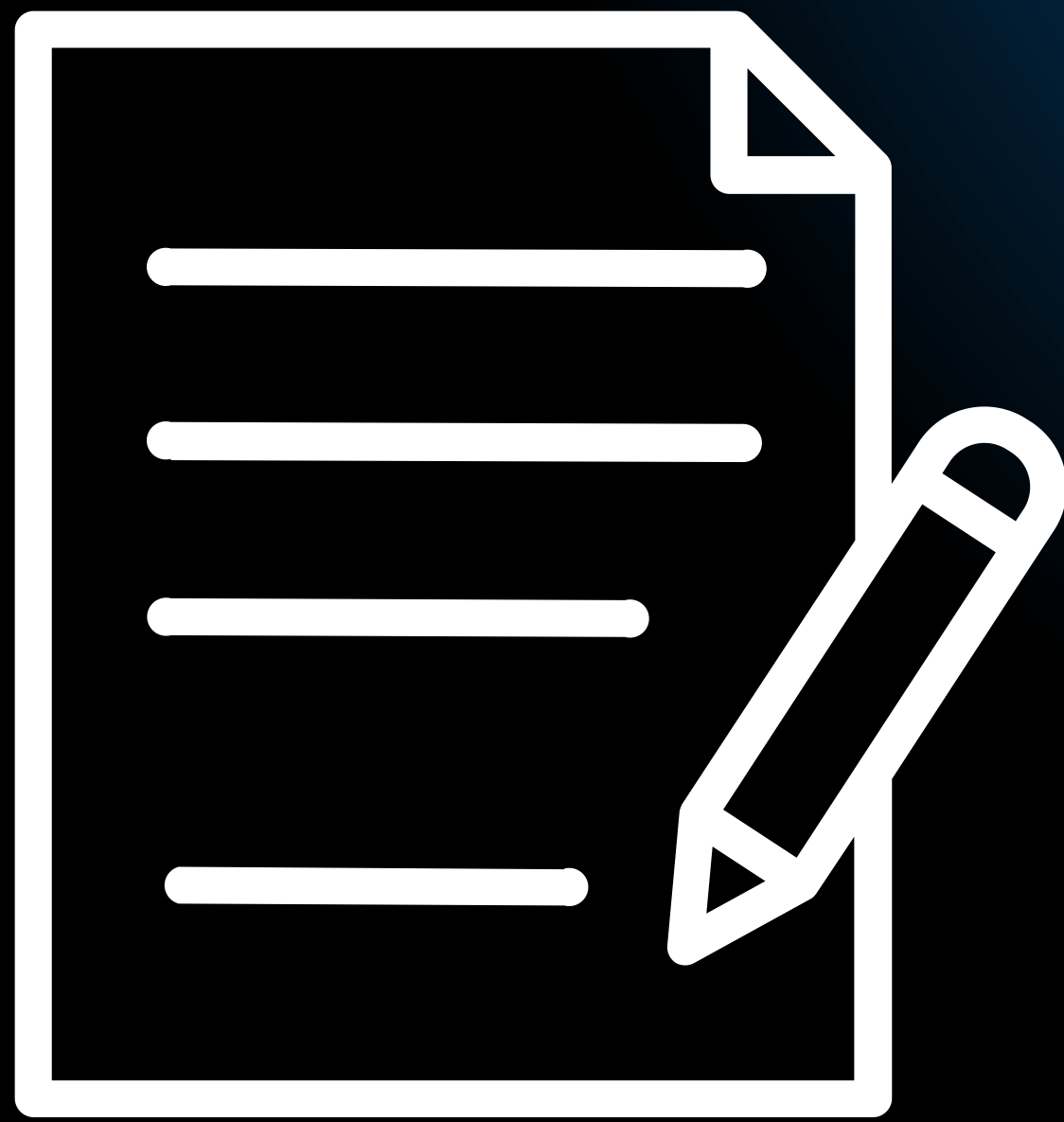
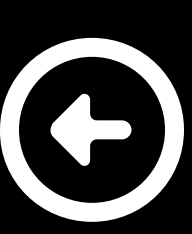
IV year - 80



Range of marks and Percentage of students

Common courses opted by students:

- An Introduction to Programming through C++
- Cyber security and privacy
- Data analytics with python
- Design & Implementation of Human-Computer Interfaces
- Ethical Hacking
- Getting started with Competitive Programming
- Introduction to Game Theory and Mechanism Design
- Introduction to Internet Of Things
- Modern Algebra
- Natural Language Processing
- Privacy And Security In Online Social Media
- Problem Solving Through Programming In C
- Programming in Java
- Programming in Modern C++
- Reinforcement Learning
- Social Networks
- Software Testing
- Statistical Learning For Reliability Analysis



FACULTY CORNER

THE WORLD

“Je pense, donc je suis” said by Rene Descartes which means “I think therefore I am”. It was a surprise to the western philosophical world. But, in the east especially in our country, this was (is) not a surprise. The conclusions of many Hindu and Buddhist scriptures [https://ignca.gov.in/Asi_data/8688.pdf, and <https://terebess.hu/english/Nagarjuna.pdf>] are many steps ahead of Descartes. In short,

- I think therefore I am
- I think therefore you are
- You think therefore I am
- You think therefore you are

What do they mean?

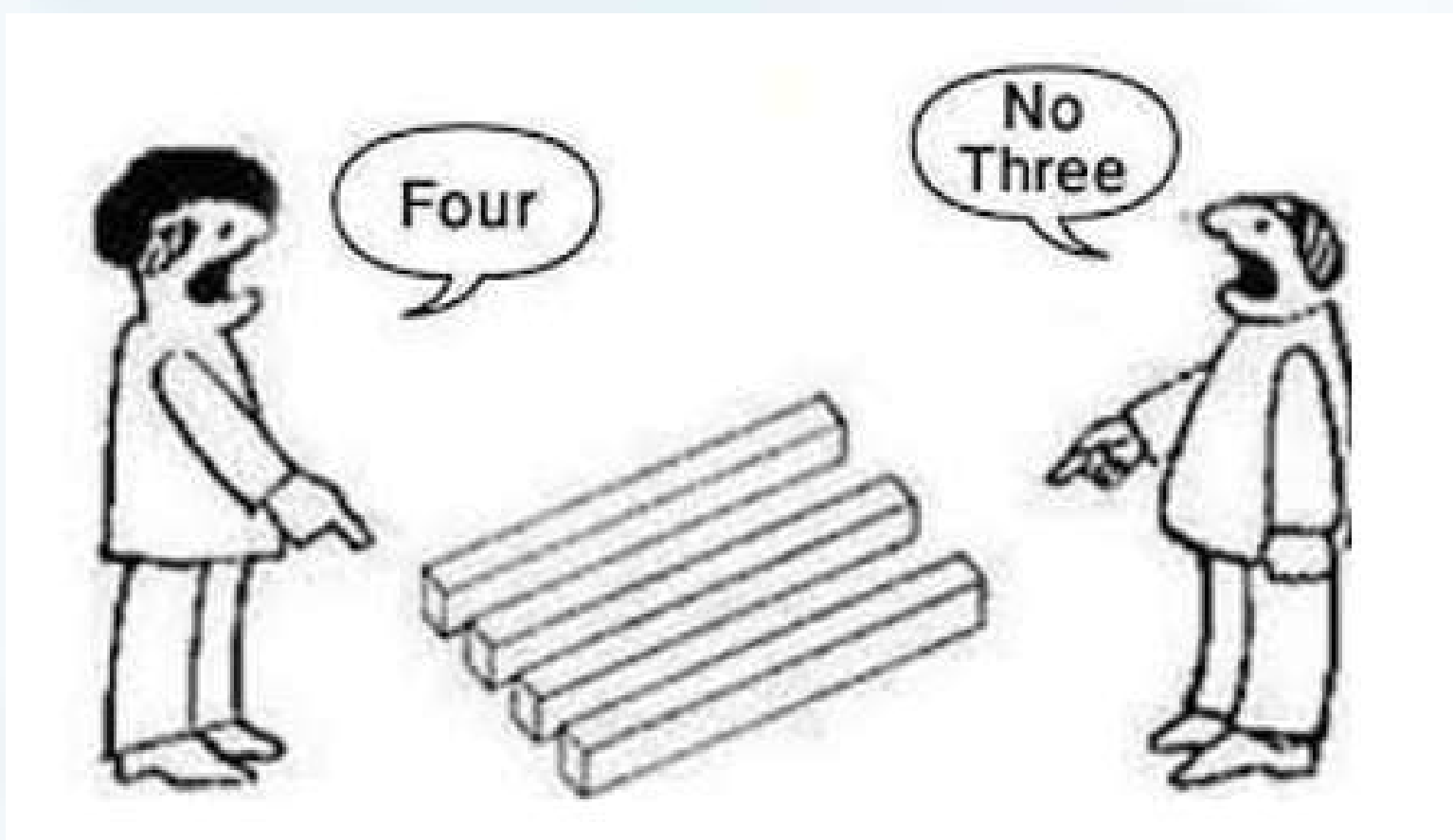
We are all looking at the world, and we perceive the world through our senses. There is a TV news “A tree, standing closer to the bus stand crowded with people, fell on the ground. All were shocked by the heavy sound, and luckily no one was injured”. Superficially, the sentence is Okay. Carefully look at the sentence. Many people heard the sound, and some did not. The beggar who was sleeping in the bus stand platform did not hear the sound. The lady sitting in the bus and absorbed into her mobile did not hear the sound. A differently enabled person (not able to hear) did not hear the sound, and the list goes on.

At least, three people were not shocked because they are completely unaware of the tree fall i.e. they neither saw the tree falling nor the sound. In their world, this event did not happen. This is true for any event. So ... where is the world? Does it exist outside or inside us?

We perceive the sound in our brain. We perceive the vision in our brain. We perceive the smell in our brain. We perceive the touch in our brain. We perceive the taste in our brain. If my ears are not proper then I may not hear what you hear. Then we’ll fight – I’ll say “I am right”, and you’ll say “I am right”. This is true for all our senses. “First of all, what is “proper”? Somebody proposes, “All the ears capable of hearing 20 Hz to 20 KHZ are proper”. Immediately dogs will propose, “Hey! We have far better ears than you people. Our hearing frequency range is broader”.

Elephants will say, "We can communicate up to 20 KM by sending low frequency signals. No one can generate this signal and no one can hear this except another elephant. Ours are proper". Cockroaches will say, "We are the best, and we can predict/know the earth quake a week before, by hearing to the very low frequencies generated by the earth's core".

Who/what is the reference? The world what we perceive is solely depending on the sensors (ears, eyes, skin, nose and tongue), and the world is generated in our brain. Sensors are there, and brain is there – if my mind is absorbed somewhere else then I won't see you even if you are standing just before me. Sensors are there, brain is there, and mind is there – still the world is perceived inside me only, and it's true for everyone.



Everyone has a different world (depends upon the sensors, brain and mind). How many worlds are there? Answer is "Infinite". Even a world exists for a bacterium also.

Apart from the sensors, brain and mind, one more thing also decides "How do I see the world?" i.e. the social aspects (likes & dislikes, and beliefs & non-beliefs generated by our parents, our language group, our religious group, media, etc...).

So... the world is subjective or objective? In the past, science proclaimed "Objective world". Can we know the external world accurately? Then... What and where is the reference?

At some point, science realized this. Reluctantly it said, "Since we do not have the ideal instruments we cannot see the external world as it is". The underlying opinion was, "There is an external world. None of us have ideal senses. Engineering and technology at this point of time are not able to generate ideal sensors. So as of now, neither the science nor the people perceive the world correctly". Science made a sharp deviation the quantum mechanics was developed.

"Quantum theory accepts the limitation, and uncertainty principle is an example for this acceptance. "However hard you try, and even with the ideal instruments you won't be able to perceive the world as such" Heisenberg's uncertainty principle states. If we look at the quantum science it still believes in the external world.

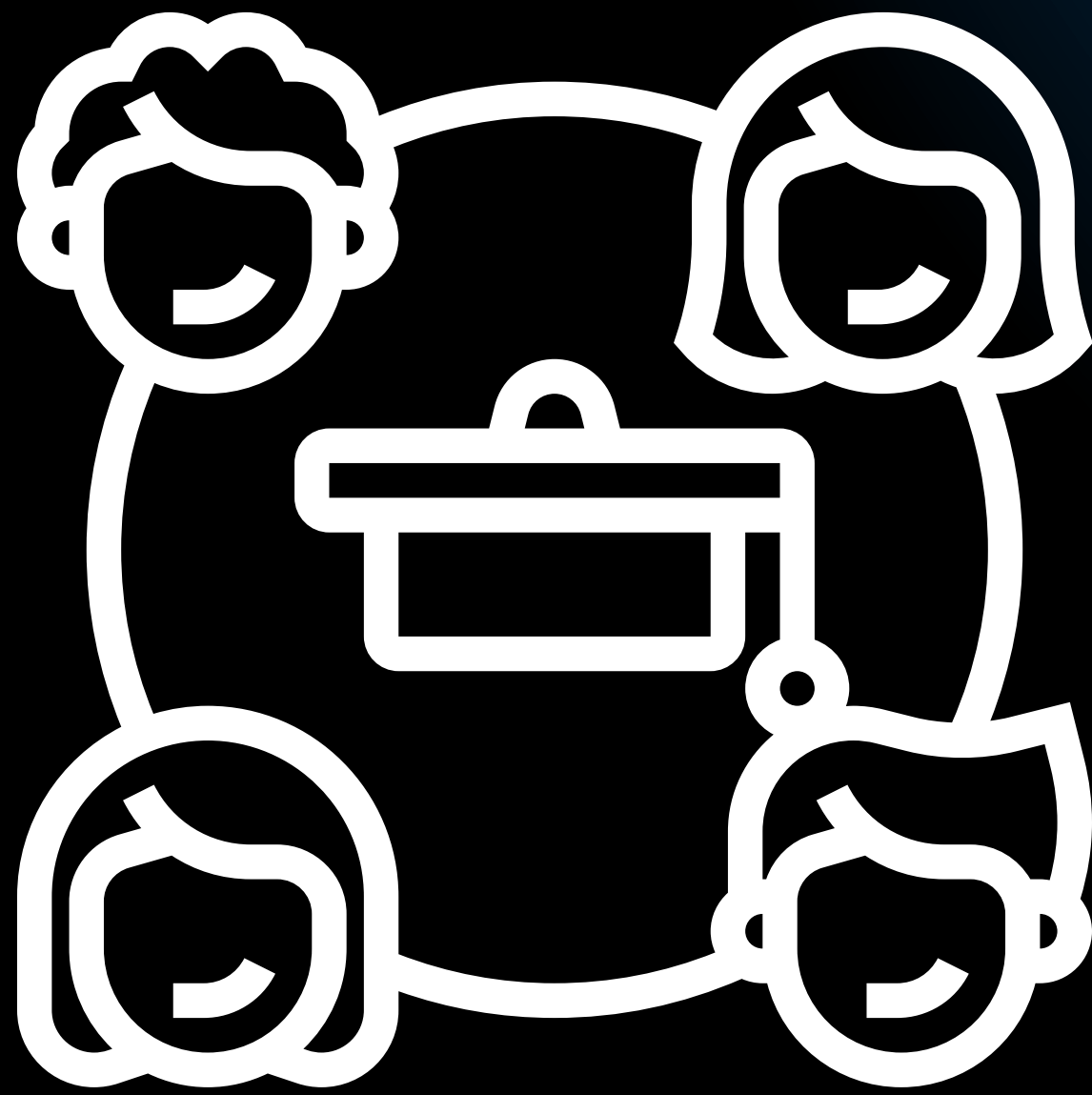
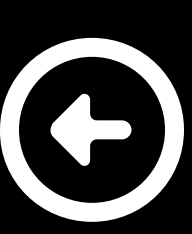
First of all, is there anything called external world? Not only, the world is subjective; it's internal world. Now we are hitting a barrier. Because, the so-called subjects are also part of the world. In your world (internal or external?) I am there. In my world, you are there.

Assume two different worlds exist i.e. external world and perceived internal world. A thought experiment If the external world is removed does it have any impact on the internal world? How to remove the external world? Remove everything external to me. Remove the trees, vehicles, persons, animals, earth, planets, sun, universe....What I'll perceive? Will I perceive anything? What's there to perceive?

That was a very pessimistic. We can approach the problem in a different way. A reminder of the problem statement "If the external world is removed does it have any impact on the internal world? How to remove the external world?". If I shut my senses, brain, mind, and my beliefs & non-beliefs, then external world will not enter into me. Doctors will announce " I am dead" 😊



Dr.R.Srinivasan
Professor



ALUMNI CHANNEL

ALUMNI VISIT TO SSN

The batch of **B.Tech IT 2009-2013** visited the campus, marking the **10th year** of their graduation on 18th December. 18 alumni visited the campus, spent time reminiscing their memories in our department. They **contributed Rs. 3.2 Lakhs** towards the Alumni Scholarship.

It was handed over to the SSN president by Dr. Sundharakumar.



The Black Swan

The book is all about randomness and uncertainty, so basically human life. The author Nassim Nicholas Taleb, being a statistician and a risk-analyst uses the term 'Black Swan' to denote events that are highly improbable but has a huge impact in human history or an individual's life, if and when it occurs. Black Swans are nearly impossible to predict yet the human brain always tries to predict them and later tries to rationalize those events. Other than trying to prove the existence of 'Black Swans' the book also tells us why we have to stop looking for them and how could one take advantage of the uncertainty. The book also tries to explain the logic of how 'what we don't know' is far more relevant than 'what we do know'

The author, by taking various examples, has clearly proved his point 'that history just cannot be predicted.' He has questioned the most fundamentals of human belief system - luck, fate, god, probability, the concept of 'knowledge is power' etc.... Any reader, after finishing this book would have a totally different perspective towards past, present and the future, both personal and human race as a whole. And this to me, is the fulfilment of the objective with which the author set out. This book itself could be a 'Black Swan' in the reader's life.

The book mainly talks about the Black Swan blindness, that is our inability to see the randomness in reality. The author says that the Black Swan blindness is not something that could be avoided. We just have to accept that Black Swans occur and build robustness towards them. The author provides us a lot of examples, both real and fictional to drive home his point. He manages to convince the reader of the impact of the highly improbable. Hence the book has enough contents to fulfil the stated objectives.

This book is based on author's personal experiences, scientific history, established research papers and proven mathematical theories. The bibliography section of the book itself extends for 28 pages. The author uses stories and vignettes to illustrate his arguments. Each and every chapter has a small episode of a larger story which says that existence is itself a remote event, a chance occurrence of monstrous proportions, a Black Swan. He says, "Ideas come and go, stories stay" and that is exactly why he uses stories to convey his ideas.

At the same time, one has to be intellectually attentive while reading each and every sentence. You just can't skim through a single paragraph. Also, since this book is based upon a relatively unexplored area, one has to take time to think and revisit his/her life, after reading every chapter.

The author even apologizes for skipping some topics that he thinks is 'obvious' and 'too dull' to write. These topics if been written could have made the read a bit easier. Yet the author makes the narrative really funny, curious, and quirky.

One can't predict history or for that matter even the near future. The conclusion of the book is that, the only thing we can do is not be a 'turkey', in total blindness to the Black Swan (the Thanksgiving Day) and be the 'butcher' who gives the turkey its food every day and is aware of the B-day. Black Swan is subjective to the observer; hence one has to keep an open mind always. Also, the book asks us to take advantage of the uncertainty - create 'Black Swans' by making people believe that the 'Black Swan' cannot happen.

Economist describes this book as 'A deeply intelligent, provocative book'. This book caters to the intellectual section of the population, as it takes a lot of open-mindedness to continue reading. Students, civil servants, planners, hedge fund managers, derivatives traders and any individual who questions the concept of 'fate' would be most benefited by reading 'The Black Swan'.

This book is written for 'truck drivers who read books that are not written for truck drivers'. It is also written in very simple English, and the flow is really immersive. The chapter-wise arrangement is also very logical - it flows from purely literary to entirely scientific in subject and treatment. It changed my perception of life and 'luck'. It beautifully manages to persuade the readers to stop sweating about small stuff and get ready to face the 'Black Swans'. To stop trying to control things that are really not in our control, but instead focus on the things we can do. To worry less about embarrassment than about missing an opportunity.

This book reads by itself.

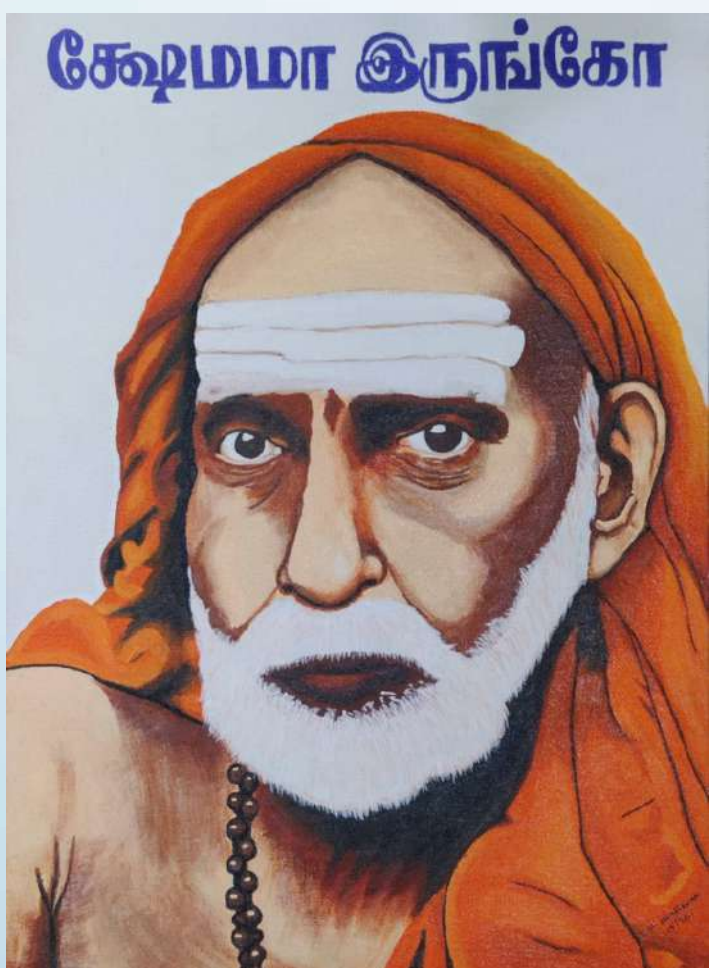
Name of the book: The Black Swan, the impact of the highly improbable.

Name of the Author: Nassim Nicholas Taleb

Publisher's name: Penguin Books



Soumya A
IRS, 2016 BATCH



Keerthana KN
2019 BATCH

Soap Selling in the Digital Era: An Unconventional Perspective on Information Technology

Introduction:

In the digital age, the term "information technology" often conjures images of computers, software, and networks. However, taking a closer look at seemingly unrelated industries can reveal intriguing parallels. One such unexpected domain is the world of soap selling. This article aims to explore the concept of soap selling as another form of information technology, shedding light on the interconnectedness of seemingly disparate fields and the role of information in driving success.

The Information Behind Soap Manufacturing:

At first glance, soap manufacturing might appear to be a straightforward process rooted in chemistry and craftsmanship. However, in the modern era, the production of soap relies heavily on information technology. From automated production lines controlled by sophisticated software to data-driven quality control processes, the soap-making industry exemplifies the fusion of traditional craftsmanship with cutting-edge technology.

In soap production, information technology plays a crucial role in optimizing formulations, streamlining manufacturing processes, and ensuring quality standards. Automated systems monitor and adjust variables such as temperature, pH levels, and ingredient proportions, contributing to consistent product quality. This integration of information technology not only enhances efficiency but also allows for rapid adaptation to changing market demands.

E-Commerce and Digital Marketing:

The advent of e-commerce has revolutionized the way products are bought and sold, including soap. The online soap market has experienced significant growth, and digital marketing strategies have become essential for soap sellers to reach a global audience. Here, information technology is at the forefront, shaping customer interactions and driving sales.

Websites, social media platforms, and online marketplaces serve as digital storefronts for soap sellers. Utilizing e-commerce platforms, sellers can showcase their products, provide detailed information, and facilitate seamless transactions. Customer data collected through these platforms becomes a valuable resource, enabling sellers to analyze trends, personalize marketing efforts, and refine their product offerings.

Supply Chain Management and Logistics:

Information technology is integral to the efficient functioning of the soap supply chain. From raw material sourcing to manufacturing and distribution, digital systems optimize every step of the process. Advanced inventory management systems, powered by data analytics, help soap manufacturers maintain optimal stock levels, reducing the risk of shortages or excess inventory.

Moreover, logistics and transportation benefit significantly from information technology. Route optimization algorithms, real-time tracking systems, and predictive analytics streamline the movement of soap products from manufacturing facilities to distribution centers and, ultimately, to the hands of consumers. These technologies enhance the overall efficiency of the supply chain, reducing costs and minimizing environmental impact.

Customer Engagement and Feedback:

In the soap-selling landscape, customer engagement is a critical factor for success. Information technology facilitates direct communication between sellers and consumers, fostering brand loyalty and customer satisfaction. Social media platforms, email marketing, and online forums provide soap sellers with channels to engage with their audience, share information, and gather valuable feedback.

Customer reviews and ratings, often collected through online platforms, serve as a valuable source of information for both sellers and potential buyers. Analyzing this data allows soap manufacturers to understand consumer preferences, identify areas for improvement, and adapt their products to meet evolving market demands. The iterative feedback loop made possible by information technology contributes to the continuous improvement of soap formulations and customer experiences.

Data Analytics in Soap Selling:

The role of data analytics in soap selling goes beyond customer feedback. Analyzing market trends, consumer behavior, and competitive landscapes empowers soap sellers to make informed decisions. By harnessing big data, soap manufacturers can identify emerging trends, predict demand patterns, and tailor their marketing strategies accordingly.

Data-driven insights also enable soap sellers to optimize pricing strategies, promotions, and product placements. Understanding the preferences of different customer segments allows for targeted marketing campaigns, increasing the likelihood of conversion. The ability to leverage data analytics effectively provides a competitive advantage in the soap-selling industry, allowing businesses to stay agile and responsive to market dynamics.

Quality Assurance through Technology:

Ensuring the quality of soap products is paramount for customer satisfaction and brand reputation. Information technology plays a pivotal role in modern quality assurance processes within the soap industry. Automated systems equipped with sensors and monitoring devices continuously assess product attributes, ensuring consistency and adherence to quality standards.

Moreover, technology facilitates traceability throughout the production process. From the origin of raw materials to the final product, manufacturers can track and trace every step, providing transparency to consumers. This transparency builds trust, as consumers increasingly seek products with clear information about sourcing, manufacturing processes, and environmental impact.

Cybersecurity in Soap Selling:

As soap selling becomes increasingly digitized, the need for robust cybersecurity measures becomes apparent. The protection of sensitive customer data, financial transactions, and intellectual property is critical for the long-term success and reputation of soap sellers. Cybersecurity technologies, such as encryption, secure payment gateways, and firewalls, safeguard against potential cyber threats.

Soap manufacturers must prioritize the security of their e-commerce platforms and customer databases to mitigate the risks associated with data breaches and unauthorized access. Investing in cybersecurity measures not only protects the interests of the business but also instills confidence in customers who entrust their personal information during online transactions.

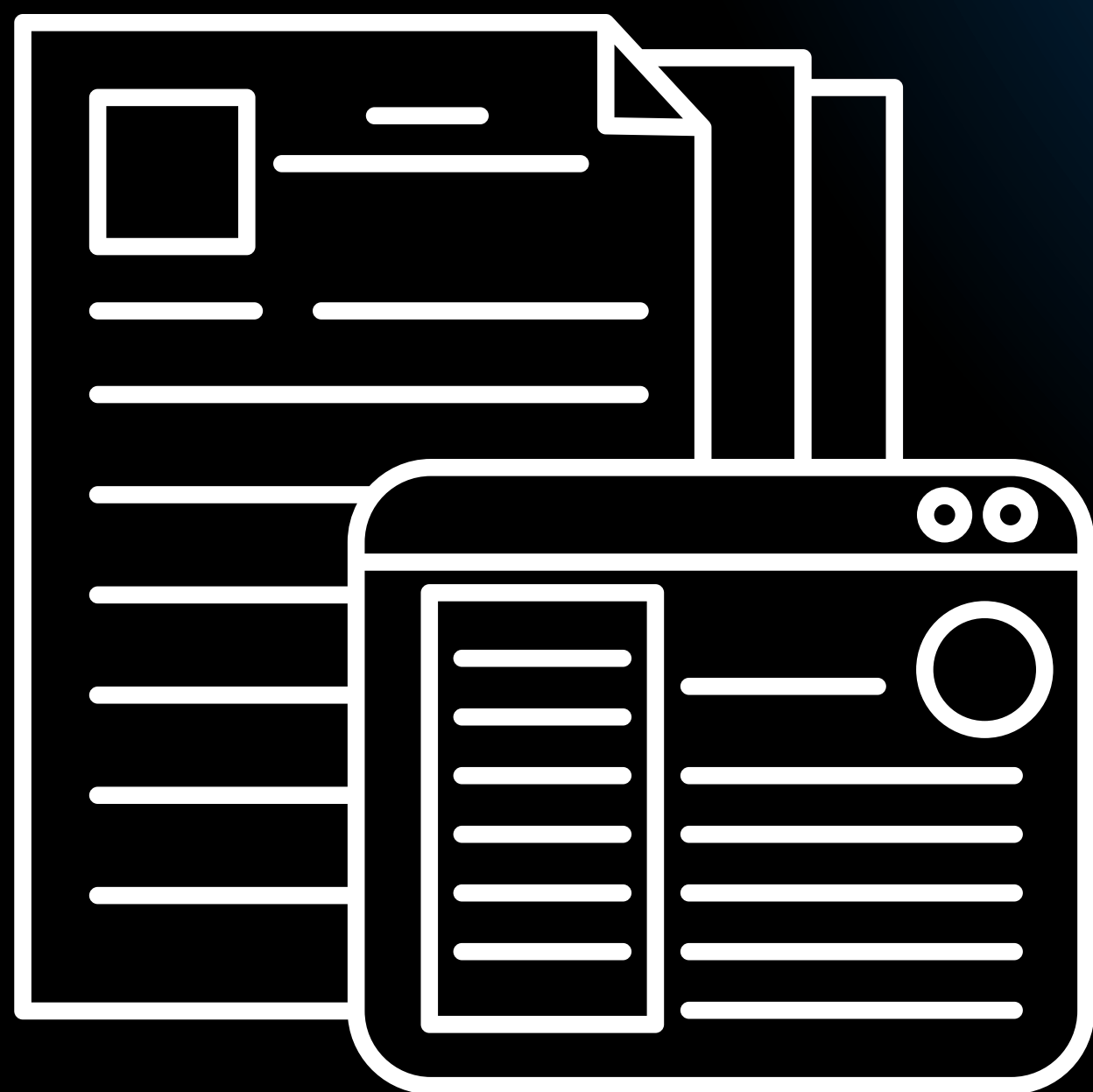
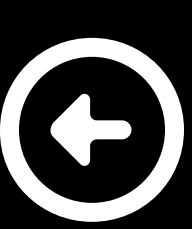
Conclusion:

In conclusion, soap selling, seemingly distant from the realm of traditional information technology, is undeniably intertwined with the digital landscape. From manufacturing processes enhanced by automation to e-commerce platforms driving global reach, information technology shapes every aspect of soap selling. The integration of data analytics, customer engagement strategies, and cybersecurity measures demonstrates that even in seemingly simple industries, the power of information technology is transformative.

This unconventional perspective serves as a reminder that technology is not confined to the traditional realms of software and hardware; it permeates diverse sectors, shaping the way businesses operate and connect with consumers. As soap selling continues to evolve in the digital era, those who embrace and leverage information technology will not only stay competitive but also lead the way in innovation and sustainability within the industry.

Jayaram Hariharakrishnan
2019 BATCH





STUDENT ARTICLES

Silent Guardian or Intrusive Proxy? Google's Privacy Frontier

Google helps us in hiding our IP address when we are surfing the internet, but how they integrate their proxy into the google chrome browser is kind of weird and crazy at the same time.

And **Google calls it its IP protection feature, which involves running their own proxy server.** It is great until they start looking into your stuff.

First let's talk about what is proxy. It is something that is around us for a long-time helping people hide their IP and maintain some privacy. Our IP address would be visible to all the website we visit which can tell lot about ourselves. **Our IP address clearly associates about what we are doing and where we have been.** It turns out to be very dangerous down the road as it'll be able to create a unique profile about us by combining all the information taken from our IP address. **Unlike cookies, we can't opt out of this. A proxy is just the site between ourselves and the website we are connecting. It will communicate between the user and the website we are visiting. It works by showing the IP of the proxy server instead of our own IP address,** thereby preventing the website from tracking us, learning about us, knowing us, using us and all other creepy stuffs. While they both share the same goal, they are different as a VPN encrypts our data and sends it through a tunnel while proxy doesn't encrypt anything and hence is much faster than the VPN.

Talking about Google running a proxy, it is like **a middle man attack which is a hacking technique wherein a hacker sit himself between the user and the website they are visiting and try to steal the information going back and forth.** They can observe it and steal it. They put themselves between our traffic and they have the potential to see everything. Now, I am not saying that Google doing that but it creates the potential by making their own proxy server. Does google really need to do that? Aren't they already see all our traffic. **While Google says, "We don't see the**

traffic. Trust us", thinking as a hacker, one doesn't need to hack thousands of millions of individuals to gain access to information. All one's got to do is hack one of Google proxy server and get all that information. What if a hacker doesn't need any information but they just want to see the world burn? **All they need to do is disable all the filter by a DDoS attack which leads to everyone having access to anything.** Google will effectively be changing the way the internet works by having a lot of people going through the proxy which might lead to anything.

And there may be also a second hop which is just another proxy between us and our website. But the second proxy will be run by someone else and not Google. **The second hop may be ACDN or a content delivery network. Maybe Cloudflare or Akamai. Google will still run the first hop, but second will be someone else ensuring that neither proxy can see the client IP address and the destination, which is funny because the Chrome will be transferring into an Onion network, Tor network, dark web.** How they obscure our identities and keep people anonymous through multiple hops, onion relay. So, I think this could be cool as long as they take their actions into consideration. They're also going to comply with the local laws and regulations that have to do with content localization. **So, the privacy proxy will assign IP addresses that represent the user's current location and with that location they need to comply with the local laws.** From this we can see that Google is cooking something big. **This might lead to a large amount of the illegal activity. This is planned to be released in late 2024.** I think that this will make a revolution in the internet history.

In conclusion, Google's move to integrate a proxy into Chrome for enhanced privacy brings both promise and concern. **While the potential for concealing IP addresses offers online anonymity, the intermediary role raises questions about data security.** The article emphasizes the need for a balanced perspective, urging users to weigh the benefits of increased privacy against the risks associated with this new development.

Vijay R S
2nd Year



Marvels of Artificial Intelligence in Healthcare

In today's healthcare world, Artificial Intelligence (AI) is changing the game. Imagine a world where computers help doctors make better decisions, diagnose diseases more accurately, and even create personalized treatment plans. This article will take you on a journey into this exciting blend of technology and healthcare.



Have you ever wondered how doctors can spot tiny problems inside our bodies? AI is making this process super easy. Think of AI as a helpful assistant to doctors, especially when it comes to looking at X-rays, MRIs, and CT scans. Studies show that AI is

excellent at finding small issues early on, like spotting signs of cancer before it becomes a big problem.

No two people are exactly the same, right? Well, AI helps doctors understand this better. It looks at our unique features, like our genes and lifestyle, to create treatment plans that fit us perfectly. Imagine having a doctor who knows you so well that they can suggest treatments designed just for you. That's the power of AI in personalized medicine.

Being a doctor or a nurse is a tough job, but AI is here to make it a bit easier. It's like having a smart assistant. AI helps keep an eye on patients and even does some of the paperwork and scheduling appointments. This teamwork between humans and AI makes healthcare smoother and faster. It's like having a superhero team, where everyone does their part to keep us healthy.

Now, let's dive a bit deeper into the amazing ways AI is changing healthcare. Think of AI as a super-smart assistant for doctors. It's like having a friend who is really good at spotting problems, especially in pictures of the inside of our bodies like X-rays and

scans. AI is like a superhero sidekick, helping doctors find even the tiniest issues, like signs of sickness before it becomes a big problem. So, it's like having a guardian angel for our health.

And guess what? AI doesn't treat everyone the same way. It's like having a doctor who knows all the things that make you who you are, like your genes and how you live. This way, the treatments suggested by AI are just for you, like having a personalized superhero suit designed exactly for your needs. That's the magic of AI in personalized medicine.

Finding new medicines for unexpected diseases can take a long time, but AI is like a smart scientist speeding up the process. It sifts through loads of data to find potential medicines faster. This means we might get



new and better medicines sooner. Imagine a world where diseases can be treated more effectively because AI helps find the right medicines quicker.

Although AI in healthcare is beneficial, it has its own challenges. We need to think about data security like keeping our personal medical information safe, making sure the AI doesn't favour one group of people over another, and creating rules to make sure everything is fair. It's like making the AI follow the right rules to keep everything in balance.

So, there we have it- the world of AI in healthcare. It's like having a smart friend helping our doctors, making treatments personalized, and speeding up the discovery of new medicines. But, just like any superhero story, there are challenges to face. As we move forward, let's make sure our superhero AI does good and helps us all lead healthier lives.

In conclusion, the relationship between AI and healthcare holds immense promise. From early disease detection to personalized treatment plans and expedited drug discovery, the benefits are profound. Yet, as we embrace this transformative era, it is crucial to remain vigilant, addressing issues of data security, bias, and

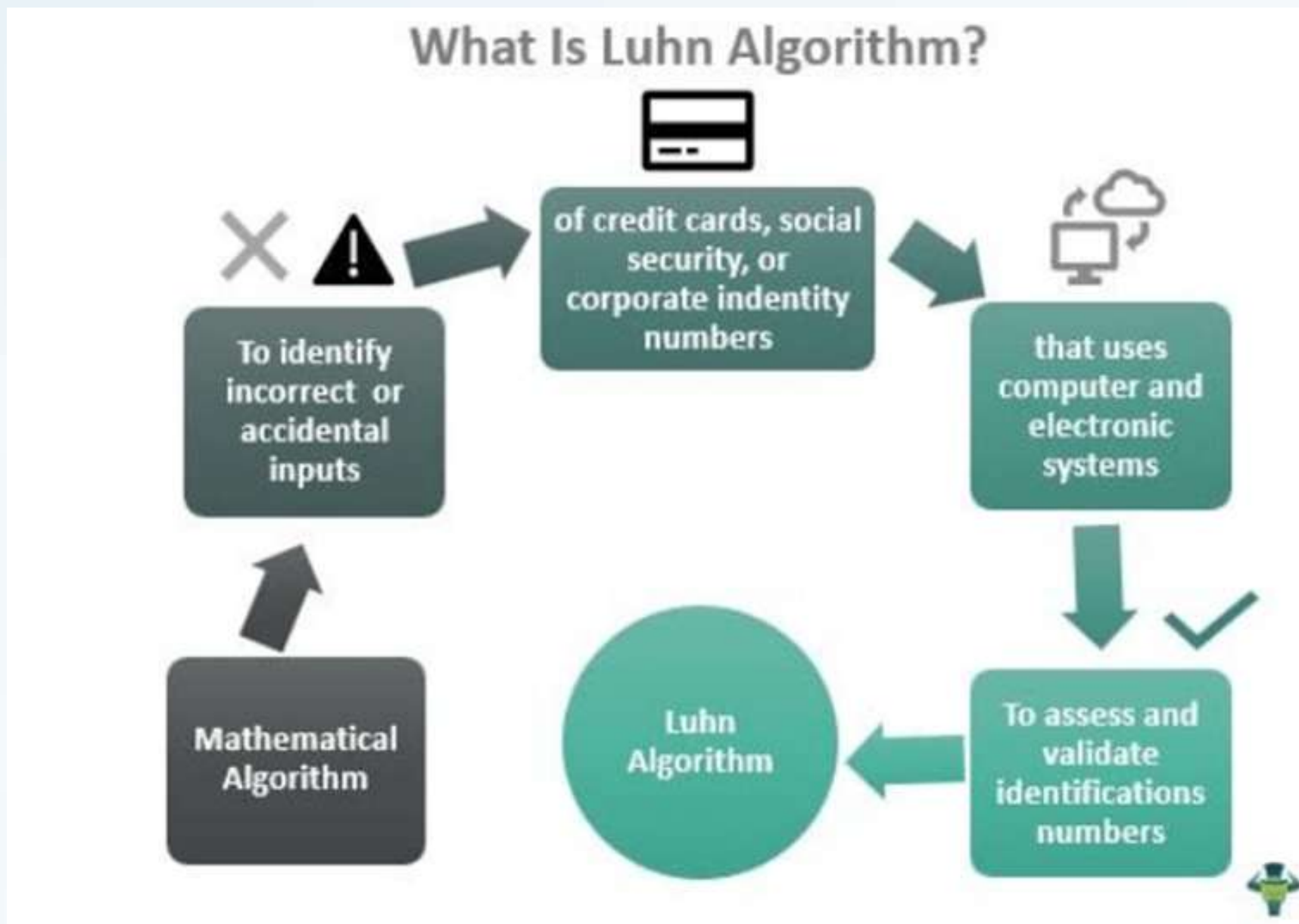
fairness. By doing so, we can harness the full potential of AI to create a healthcare landscape that is not only advanced but also ethically sound, ensuring the well-being of individuals and society as a whole.

Kathir Kaman A
2nd Year



Luhn Algorithm

Have you ever wondered about the logic behind the numbers on the credit card? Is it random or does it have a logic behind it. There exists an algorithm for these numbers. It is known as Luhn's algorithm. It is used to validate the credit card numbers, in order to ensure the legitimacy of the card.



The Luhn algorithm, also known as the modulus 10 or mod 10 algorithm, is a **checksum formula** devised to verify the legitimacy of credit card numbers and other identification numbers. Named after its creator, Hans Peter Luhn, who introduced it in 1954 while working at IBM, this algorithm has become an integral part of credit card validation processes.

At its core, the Luhn algorithm serves as a first line of defence against accidental errors and malicious activities, ensuring the accuracy and authenticity of credit card transactions. Its application extends beyond credit cards to various identification numbers, such as Social Security numbers, IMEI numbers, and more.

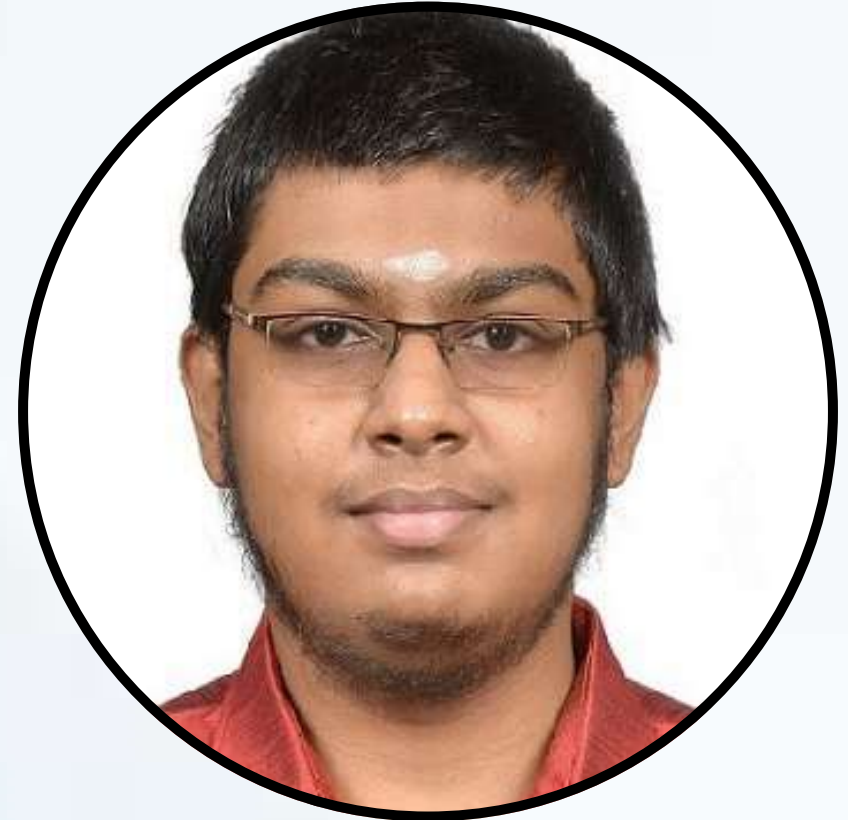
Following are the steps of the algorithm:

- **Starting from the rightmost digit:** The algorithm begins by considering the rightmost digit of the credit card number as the "check digit" or the digit to be validated. For example, let's take the credit card number "5432 1234 5678 9876," where 6 is the check digit.
- **Doubling every other digit:** Moving from right to left, every second digit (from the right) is doubled. In our example, this means doubling the digits in positions 2, 4, 6, etc. If doubling a digit result in a number greater than 9, the individual digits of the product are summed. In the case of our example, we would have: 1, 4, 2, 4, 6, 8, 10, 16, 14, 2, 16, 10, 14, 4, 10, 8.
- **Summing up the digits:** The next step involves summing up all the digits obtained after doubling and, if necessary, summing the individual digits in the results. For our example, the sum is 90.
- **Checking the validity:** The final step is to check whether the sum obtained is a multiple of 10. If the sum modulo 10 equals 0, then the credit card number is considered valid. In our case, 90 modulo 10 is indeed 0, confirming the validity of the credit card number "5432 1234 5678 9876."

Its simplicity allows for efficient implementation in various programming languages and systems, contributing to its widespread adoption in the world of finance.

While the Luhn algorithm is effective in catching common errors, **it has limitations.** It cannot detect all types of errors, such as adjacent transpositions. Additionally, it doesn't provide foolproof security against intentional fraud. For instance, it cannot distinguish between different permutations of valid digits, making it vulnerable to sophisticated attacks.

An alternative algorithm, the more advanced and secure Double-Add-Double (DAD) algorithm, addresses some of these limitations. DAD not only detects a wider range of errors but also incorporates more complex calculations, offering enhanced protection against both accidental mistakes and intentional manipulation in credit card transactions and other numerical validation scenarios.



Sudarshanan
Muthukumar
4th year

The Quantum Genetic Algorithm and Evolutionary Optimization

A look at my implementation of MQGA

Genetic Algorithms (GAs) are heuristic optimization techniques (those that find approximate solutions to complex optimization problems) inspired by Darwinian evolution (that is, they improve the found solution over time to get to an optimized result). Quantum computation is a new computational paradigm which exploits quantum resources to speed up information processing tasks. Quantum computing is fundamentally different to classical computing, as it uses quantum mechanical concepts like superposition and entanglement and could vastly enhance the performance of GAs. By introducing such quantum degrees of freedom, the GAs become Quantum Genetic Algorithms (QGAs). Along this line, I have been able to implement the Modular Quantum Genetic Algorithm (MQGA) under the guidance of Dr. R. Srinivasan. In MQGA, a hierarchical structure is followed with smaller modules being used to solve sub-problems.

It proved to be a fascinating and a true mental challenge while defining the precise functionalities needed for the project. Each facet of the algorithm unfolded through a series of trials and errors, as it was crafted entirely from scratch. The invaluable guidance of my professor was instrumental in successfully navigating through this process. That being said, the steps that were implemented were not as complex to understand and hence, I give a taste of my project's sequential steps:

The QGA follows similar steps to the classical GA albeit bringing in concepts of superposition with non-binary values chosen.

1. Generating the quantum population: 10 quantum genes (better known as qubits) were generated randomly from a range, each as a uniform distribution (thus introducing superposition) such that its PDF (Probability Density Function) is 1.

Every 2 quantum genes interfere (or to put it mathematically, the PDFs overlap) to generate new PDFs and their CDFs (Cumulative Distribution Function) were calculated. Each CDF represents a variable or a quantum state. That is, this CDF calculation forms a

crucial part of QGA as it quantifies the probability of finding a solution at a given point in our search space. We now have 5 CDFs calculated. In finding the CDF, we evaluate the fitness of our population and we also apply quantum operators (like superposition or entanglement) using the CDF.

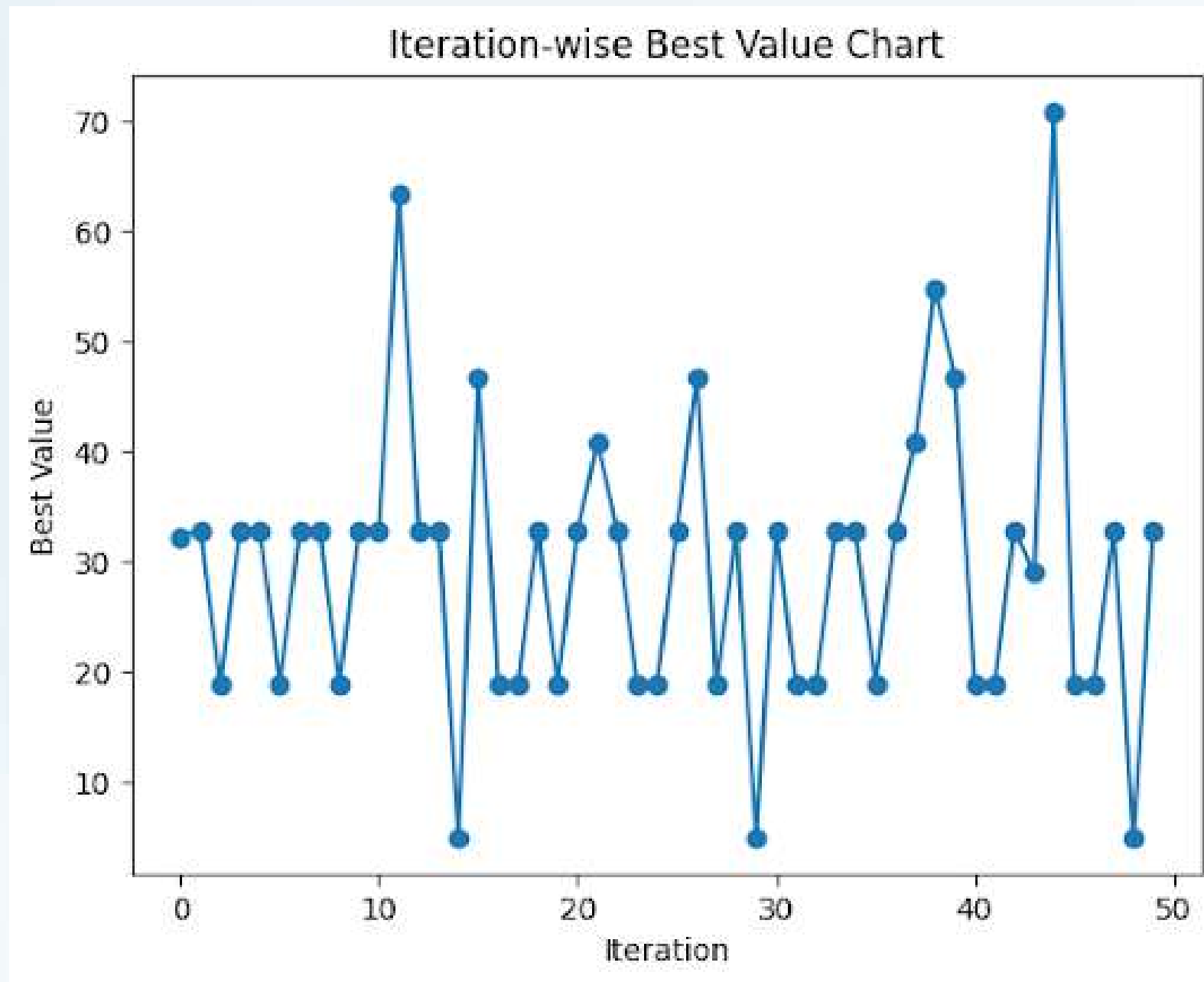
2. Converting the Quantum population to Classical population: Random six y -values in the range of 0 to 1 were chosen and their corresponding x values from each CDF were derived. These represent the values of one variable in every solution (chromosome). Since each solution (chromosome) has 5 variables (genes) every x value derived from the CDF corresponds to the value of the variable in every solution. Thus all the 6 solutions obtained are considered as a Classical population.
3. Apply Classical Genetic Algorithm on the Classical population and derive 2 Classical Best solutions: GAs rely on biologically inspired operators such as mutation, crossover and selection. If the children generated are not better than the parents then the children are generated again. Thus we get an optimized solution. Then, the 2 best solutions are extracted to form the next Classical population's source parents.
4. Converting the 2 best Classical solutions to Quantum population and repeating from step 2: Each variable's value was extracted from the solutions and converted to a quantum gene by considering the value as center to the uniform distribution with pdf value of 1. (That is, like wrapping a single point by a uniform distribution around it.) Thus these 10 new quantum genes generated are passed on to step 2.

As stated, the QGA betters its solution, or rather converges at the optimal solution over time and may take many repetitions to achieve its optimal result.

Hence, the stopping criteria I considered given the restrictions of running on Google Colab were

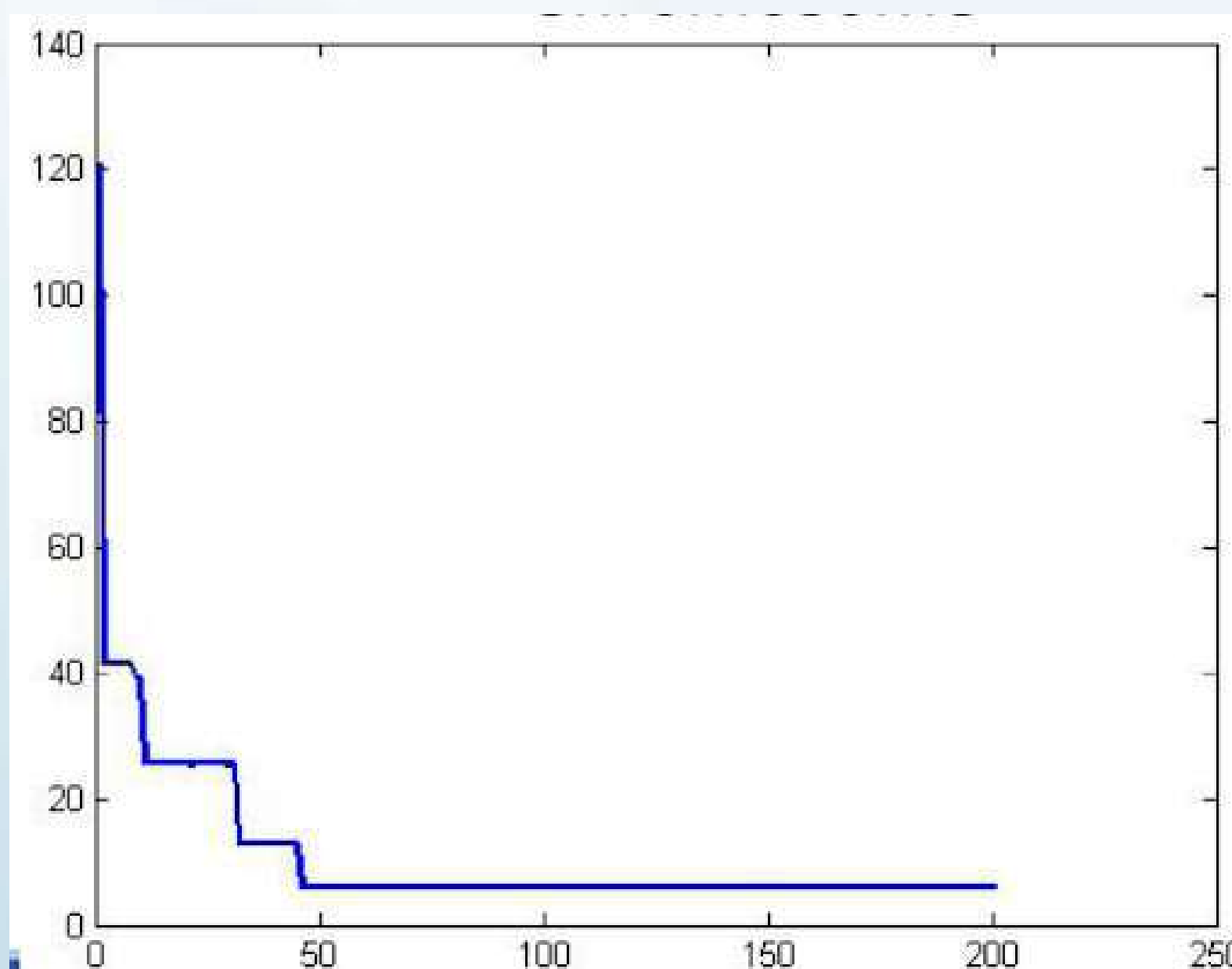
1. Maximum number of Iterations of 50 or
2. If all the children are better than the parents

The below figure depicts the results obtained from the above algorithm,



Even after the interference of all the quantum genes there is randomness in the above graph since the quantum genes are in superpositioned state so there is no guarantee that the next iteration is better than the present iteration as the range of states that a quantum gene could be in, is large.

The above results make the Quantum Genetic Algorithm different from the Genetic Algorithm(GA) as the Iteration-wise Best Value Chart for GA will be strictly decreasing as the number of iterations increases as shown in the figure below.



In doing this project, I had an exhilarating and enriching experience while also engaging in novel research and its implementation. I hope this also invites others to look at the potential of Quantumness in our current computing world and become involved in it.



S. Subhiksha
4th year

சார்லஸ் பாபேஜ்

இங்கிலாந்தின் லண்டனில் 1791 ஆம் ஆண்டு டிசம்பர் 26 ஆம் தேதி பிறந்த பாபேஜ், ஒரு கண்டுபிடிப்பாளர் மட்டுமல்ல, ஒரு கணிதவியலாளர், தத்துவஞானி மற்றும் பொறியியலாளர் ஆவார், அவருடைய பணி வரலாற்றின் போக்கை மாற்றியமைத்தது. சார்லஸ் பாபேஜின் ஆரம்பகால வாழ்க்கை கணிதம் மற்றும் பொறியியலில் ஒரு தீராத ஆர்வத்தால் நிறைந்து இருந்தது. அவர் கேம்பிரிட்ஜில் உள்ள டிரினிட்டி கல்லூரியில் பயின்றார், அங்கு அவர் கணிதவியலாளர் ஜான் ஹெர்ஷல் மற்றும் ஜார்ஜ் பீகாக் ஆகியோரால் பெரிதும் ஈர்க்கப்பட்டார். கேம்பிரிட்ஜில் அவர் இருந்த காலத்தில்தான் கணிதத்தின் மீதான அவரது ஆர்வத்தையும், இயந்திரங்கள் மீதான அவரது நீடித்த ஈர்ப்பையும் கண்டறிந்தார். வானியலிலும் சிறந்து விளங்கினார். ராயல் கல்வி நிறுவனத்தில் வானியல் விரிவுரையாளராக நியமிக்கப்பட்டார். ராயல் சொசைட்டியின் ஃபெல்லோவாகத் தேர்ந்தெடுக்கப்பட்டார். இங்கிலாந்தின் முன்னணி கணித வல்லுநர்களோடு நெருங்கிய தொடர்பு கொண்டிருந்தார். உலகப் புகழ்பெற்ற வானியலாளர் ஹெர்சலுடன் இணைந்து மின்காந்தவியல் குறித்து ஆராய்ந்தார். 1820-ல் வானியல் கழகம் தொடங்கப்பட உறுதுணையாக இருந்தார். கணிதம், வானியல் தொடர்பான கணிப்புகளை மேற் கொள்ள, புரோகிராம் செய்யக்கூடிய இயந்திரத்தை உருவாக்கும் முயற்சியில் தீவிரமாக ஈடுபட்டார். இறுதியாக 1835-ல் இப்படிப்பட்ட ஒரு சாதனத்தை (அனலிட்டிகல் இன்ஜின்) உருவாக்கினார். இதில் மில், ஸ்டோர் என்ற 2 பகுதிகள் இருந்தன. மில் என்பது தற்போதைய கணினிகளின் 'சிபியூ'வுக்கு இணையானதாகவும், 'ஸ்டோர்' தற்போதைய கணினியின் மெமரி பகுதியாகவும் செயல்பட்டன. இதுவே இன்றைய கணினியின் முன்னோடி யாக கருதப்படுகிறது. வானியல் கணிப்புகளுக்கும் இது பயன் படுத்தப்பட்டது.

சார்லஸ் பாபேஜ்

இதற்காக இவருக்கு வானியல் கழகத்தின் தங்கப் பதக்கம் வழங்கப்பட்டது. அனலிடிகல் இன்ஜின் அடிப்படையில் 'செகண்ட் டிஃப்ரென்ஸ்' என்ற இன்ஜினைக் கண்டறிந்தார். மேலும் பல ஆராய்ச்சிகளில் ஈடுபட்டு, ரயில் பாதையை அளவிடும் கருவி, சீரான அஞ்சல் கட்டண முறைக்கான கருவி, கிரீன்விச் ரேகைக் குறியீடு, சூரிய ஒளியைக் கொண்டு கண்களைச் சோதிக்கும் கருவி உள்ளிட்ட இயந்திரங்களைக் கண்டறிந்தார். பல நூல்களை எழுதினார். இவரைப் பற்றி நூல்கள், நாவல்களும் எழுதப்பட்டன. திரைப்படங்கள், ஆவணப் படங்களும் தயாரிக்கப்பட்டன. கணிதம், கண்டுபிடிப்பு, பகுப்பாய்வு, தத்துவம் இயந்திரப் பொறியியல் எனப் பல்வேறு களங்களில் முத்திரை பதித்த சார்லஸ் பாபேஜ் 80-வது வயதில் (1871) மறைந்தார். சார்லஸ் பாபேஜ் நவீன கணினியைக் கண்டுபிடிக்கவில்லை என்றாலும், அவர் முன்னோடியான பங்களிப்புகளைச் செய்தார். அவரது காலத்திற்கும் கூட கணினிகளின் வளர்ச்சிக்கான கருத்தியல் மற்றும் தத்துவார்த்த அடித்தளத்தை அமைத்தார் இதனால்தான் அவர் கணினியின் தந்தை என அழைக்கப்படுகிறார்.

Muthulakshmi T
3rd year





STUDENTS' TALES

The Academic Rollercoaster

My semester-long journey has become an academic rollercoaster, encapsulating the very essence of my experience as a student. From the initial thrill and optimism on the first day of classes to the inevitable descent in motivation as assignments and exams pile up, each twist and turn represents a unique and personal challenge.

Navigating the twists and turns of academic life has become an art that we are mastering or that we are trying to master. Weekends offer a brief time span for celebration, only to drive us back onto the rollercoaster with last-minute study sessions for exams, and a constant struggle to keep up. The grand finale of this rollercoaster ride is the final exams, marking the conclusion of the semester's long and adventurous journey. It's a mix of relief, anxiety, and a profound sense of accomplishment. Post-exams, I find myself in a freefall of emotions – from the happiness of completion to the anxiety of my grades.

But the journey doesn't end there. Parallel tracks of placements and internships introduce their own set of challenges, demanding a delicate balance between academic rigor and real-world experiences. Yet, it's this blend of academic challenges and real-world situations that adds an extra layer of excitement to the ride.

The motivation to navigate these intertwined tracks originates from the understanding that each twist and turn contributes not only to the academic growth but also to personal and professional development. So, strap in and enjoy the journey. It's this amalgamation of academics, internships, and placements that is shaping us into a resilient, motivated individual, ready to take on the next adventure. Until the next semester, here's to navigating the twists and turns with determination and joy! 📈🌟



Mythreya Kesavan
3rd year

Hacking Excellence: The HackIT Challenge

Hackathon— the term was entirely new to me, and I was curious to learn more about it. Then I came to know about the **Smart India Hackathon** conducted by the Central Ministry of India. To join the select teams from our college, we had to participate in an intra Smart India Hackathon (SIH) organized by our institution. This required a team of 6 and I formed a group with my friends. The most important thing was to have at least one girl on every team. About 180 teams had taken part. We guys presented our topic and the solution to the juries. It was really hard to convey to the juries what solution we had arrived at for the problem, as this was our first experience. We were really happy to participate, but we didn't get selected, and we were kind of worried.

Next, under the name **HackIT**, the Department of Information Technology held an internal hackathon within the college. I was excited to participate, as I thought it would be a great opportunity and experience. We formed a team of 3 on 4 with no limitation in the number of boys or girls. Our problem statement was an app-based solution to identify and solve disease in plants and crops. So basically, there were two interfaces, one for the farmers and another for the scientists and experts. Affected farmers in the rural area had to upload a picture of the disease-affected plant, and this picture would be in the feed of the experts, and they could upvote if they knew the solution to cure the disease, after which a chat option opened between the farmer and the experts. The statistical data was collected, and this was used for similar kinds of diseases that would occur in the future. We used deep learning (DL) to identify the crop and analyse its health. The submission was due on October 3rd, and the day before, we looked into it. In a hurry, we decided on the problem statement under student innovation, made the presentation slides, and then submitted them a minute before the deadline. God, it was so awful, and even though we were all exhausted and drowsy, we still put in the effort and turned in this one. It was pleasant to work for since we were collaborating well and enjoying ourselves greatly.

We got shortlisted to the next round of HackIT. We were thrilled, but the only thing that bothered us was that this round coincided with the middle of the CAT exam. We were tense but somehow managed it. It was an amazing feeling to have exams and yet concentrate on something of our own interest. Studies and marks don't matter; our skills do. We were elated as we both focused really well. However, the presentation part didn't go the way we expected. We had lots of loopholes in our project, and the juries asked us to address them. So, we felt like we were out of the contest. Nevertheless, we had gained lots of knowledge about stuff, and we worked as a team really well.

One cannot be so sure about things, as we guys experienced. We thought we were out of the contest, but a miracle happened: our team got shortlisted for the finals. We were shocked and happy, a mixture of feelings. So, the finals of this event took place on the 25th of October. We were tense and well-prepared. We were the first team on our panel, which added even more tension. We went in, presenting the finalized corrected project idea, and the juries appreciated us. We were happy as they appreciated us. The results had to be announced the same day at 3 pm in the seminar hall of the IT department. Our team assembled there and eagerly waited for the results. I noticed we three were least bothered about the results. I was playing Sudoku, and the other two were watching a World Cup match. Then the results were announced by Naven, our senior from the IT department. He continued with the first place... **THE FIRST PLACE** goes to **team NEXUS!!!...** What!!.. That was our team!!! We were shocked, tense, happy, excited... ahhhhh. God, that really happened. The first-ever Hackathon, the first-ever edition of HackIT, and we guys were the winners.

Do not judge yourself and let your hopes down is what I learned from this experience!! I really thank the organizers, the Department of Information Technology, for conducting such an event that kind of boosted the enthusiasm of students to not let hopes down but put in lots of efforts and succeed someday.

Thanks to Google for sponsoring this event and my fellow teammates, Gavutham from the Mechanical Department(our TL), and Skanta Samvartan from the CS department.



S.Srinivas
2nd Year

GOOGLE STEP INTERNSHIP 2023 EXPERIENCE

During my sophomore year, I completed a **10 week on-site internship at Google**. I was one of the **39 STEP (Student Training in Engineering Program) interns** selected nationwide for the summer of 2023.

During my internship from **5th June to 11th August 2023**, I was part of the **Customer Onboarding Products Team** (within Admin Console) in Bangalore with Anish Badri as my host and Ankit Sinha as my co-host. I worked on developing a **robust UI system**. My primary task involved **building an API to gather data from external sources and Google Chat**, complemented by the design of a secure iframe for data visualisation. Additionally, I engineered a supplementary UI feature facilitating the validation and seamless upload of data to external system's backend.

During the course of my internship, I got an opportunity to work with **Google's internal tools and used TypeScript, Soy(Closure templates), A/B testing, Dependency injection, Jasmine, and Containerization** for implementing and thoroughly testing the project.

Immersing myself in Google's vibrant and inclusive work culture was an invaluable experience. Collaborating with talented Googlers provided me with profound insights into professional conduct and technical prowess. The exposure, skills, and network cultivated during this internship have profoundly shaped my professional trajectory.

Following the conclusion of my internship, I received positive feedback regarding my overall performance and hence I have received a return internship offer as a **SWE Intern for 2024**.

Sreeshma M Nair
3rd Year



Byte by Byte: The Citi Experience

As you might know, Citi is a prominent figure in the banking and financial industry, and being selected for an internship here is exceedingly coveted. I was one of the very few in the department and among a select handful across the country chosen for the Citi internship program. Usually, big tech companies come for their intern drive much earlier, usually close to a year before the actual internship date and usually before other companies and startups so that they acquire top-tier talents in the institution. Likewise, Citi was among the very first companies that came for the intern drive at SSN, and this was around the start of my 5th semester.

Different companies consider different shortlisting strategies, usually DSA rounds. In my batch, it was a total of 3 rounds starting with the shortlisting round with an assessment encompassing aptitude, DSA, DBMS, and other CS-related concepts. This is to evaluate your proficiency and your hold on the basics. Once you've cleared this you get to the interview phase and the interview blueprint might differ for each individual depending on the requirements and the interviewer. Interviewers typically assess your proficiency as a developer comprehensively. Multiple interviewers incisively tested me on all aspects from projects to DSA, each interviewer presented distinct questions and inquiries (kinda like multiple interview rounds within the same round) leaving no stone unturned in their evaluation. These interviewers are working professionals within Citi and are looking for their ideal candidates to fill the vacancies in their teams. In a nutshell, you must possess all the necessary qualities of a developer to impress these interviewers. The final round is an HR round where they check the candidates fit into the organization.

I undertook the internship from May to July, during which my semester exams were scheduled, and had to manage both my intern and the examinations simultaneously. The internship itself was a great experience where you get to work in a professional environment and learn and hone your expertise. You get to work in an Agile environment, collaborate with others, and learn the significance of meeting deadlines.

I had the opportunity to work on a project where I had developed it from scratch with my team which was to be adopted within various teams within the organization. Some of the perks of working at Citi include flexible working hours, WFH flexibility, goodies, amenities within the office, hang-out spots with your buddies, indoor and outdoor sports, and most importantly lots of Coffee!!!

All in all, obtaining an internship bestows myriad advantages. They provide us with reality checks about where we stand in our respective fields, and we get to apply our skills in real-world scenarios. We obtain valuable experiences that propel us towards our goals. Competitive programming is not the only method for obtaining your desired CS internship, rather holistic development and a passion for software development and a strong grasp of the fundamentals go a long way. Studying in SSN amidst skilled faculties and supporting peers could help you in achieving your goals. Always open to connect with you guys! Dream big and achieve bigger, Cheers!!!



B Prajeeth
4th Year

Connect with him @ www.linkedin.com/in/bprajeeth

Internship Experience at PayPal

A lot was running through my mind when I entered the PayPal office. I sat in the lobby with the interns and the RGs (recent graduates) got us all talking. I noticed that everyone was welcoming and easy-going, a fact that held throughout my internship.

I met my manager on the first day after the onboarding process. He gave me a rundown on the nature of the team and the type of work they took on. He also tried to understand my existing skillsets and expectations from the internship. I was surprised; I thought that the work would be set in stone already, that I would have to complete them according to strict schedules, much like what I was used to throughout my education. I very eloquently responded that I could handle web development and that I wanted to concentrate on a few big projects if it meant I could build something tangible.

Over the next couple of days, I got introduced to the team of 8-10 members. It inevitably took some effort to adapt to expressing professionalism without using honorifics. That first week was spent learning about the tools that my team managed and trying to decipher a million technical mnemonics.

I spent my second week trying to learn the frontend framework built on React that PayPal used, and by the end of that week, I was assigned a task. I had to build a centralized portal that the PayPal employees can use to respond to customer queries. The required information had to be isolated from sensitive information and consolidated from across various avenues in an easy-to-access manner. Thus, the time lost on manual lookup could be reduced exponentially.

I was pressed for time owing to my upcoming 6th Semester Examinations. So, I was asked to deliver a prototype of my proposed solution by the end of the 3rd week. It was pretty challenging; I did not have access to the actual data yet, and the framework was pretty new to me. However, the goal was to gain experience working on that framework, as expressed by the tech lead, while conveying what a fresh mind saw as necessary for that particular use case. Dare I say that the efforts I put into the prototype created a good

first impression. The next three weeks were spent learning various things and refining the prototype with ongoing exams.

After my end semesters ended, I had access to the actual code base. From there, I had less than 6 weeks to finish the project. The prototype I had built based on a lot of assumptions was only partially useful in the actual scenario. Many important features were added at later stages, leading to a lot of reworking. Some days were busy. Some days, I would raise a ticket and wait until I gained access. Leveraging their DevOps pipelines was definitely an interesting experience. A senior SDE checked in regularly and helped whenever necessary. A great emphasis was placed on finding solutions on my own, communicating any doubts I still had, writing quality code, and adding extensive test cases.

I might have worked a few weekends but I stopped after realizing that no one else did that. I went to the office every Friday and on the days that I needed/wanted to. The lunch breaks were usually followed by a few rounds of pool. Frankly, we interns spent more time there than we probably should have. By the final week, my project was live, up and running. I was only able to do so owing to the support my team offered every step of the way, and for that, I'm grateful. As a final step, I presented my work to my director.

Overall, it was a great learning experience and I was immensely satisfied. I felt a sense of fulfilment building a tool that will reach people for sure and be useful to them. Because, after all, that is the essence of engineering. I pretty much had no heart to leave when the time came.

The SDE and Data Analyst interns there worked on a varying number of projects at different scales. Some worked exclusively on the frontend/backend while others worked on full stack projects. There were a lot of variables affecting the internship experience but the general consensus was definitely positive.



Nusaiba Afsheen R
4th Year

The subtle art of letting go

My 2nd and first half of 3rd year were the prime “college” days of my life. I had the utmost fun, made new friends and actually liked my life. I was reveling in the joy of it all. By the time I was in 3rd year, companies started coming for internships. Being a part of the IT department, I was brimming with confidence that securing a summer internship was just a matter of time. I don't know if i was overconfident or what but, I dedicated a solid 10 days to prepare, under the assumption that it would be sufficient. The first company that came for intern was Fidelity, it was around june. I cleared the aptitude test easily. With absolutely zero stress, I gave my first interview. I was asked about OOPS concepts and asked to write pseudo code explaining differences between runtime and compile time polymorphism. Despite my initial confidence, I realized afterward that my explanations weren't as clear and precise as they should have been. I got rejected for the first time.

Throughout my academic journey, I've consistently turned my dreams into reality. From excelling in board exams, to getting admitted at SSN, success seemed to follow me effortlessly. However, the taste of rejection was an unexpected and bitter experience. I didn't let this initial rejection shatter my optimism, considering it was just the first company in a sea of opportunities. I applied for Citibank, but got rejected again. Then came natwest, i went till HR round. This time I gave my best. I was so confident I'll get through, but I got rejected again. I was devastated.

Everything after this is kind of a blur because I wasn't used to handling rejections, I started doubting my potential, went through a lot of sleepless nights and felt like I wasn't enough. It was difficult for me to focus on anything else without thinking about my rejections. I never gave up, somehow I showed up for all the upcoming interviews and eventually got my summer internship at Sulekha. That was an incredible learning experience and totally worth the wait.

Next up was the real deal – placements. Regaining my confidence, amidst recession, I saw numerous opportunities as a second chance. Giving my absolute best, I interviewed at companies like Citi, Barclays, NatWest, Comcast, twice at McKinsey, and many more. Despite my unwavering effort, I confidently handled all of the interviews which were mostly focused on fundamental topics like SQL, Data Structures, Algorithms, and standard HR questions, I faced repeated rejection. The elusive nature of my shortcomings became a persistent puzzle, leaving me in a state of uncertainty. Throughout this challenging period, my friends and family provided unwavering support, which became an invaluable source of encouragement.

Albeit these things made me more resilient. Letting go, in my newfound understanding, is not synonymous with giving up. It means giving your best, utilizing your full potential, and accepting that certain outcomes are beyond your control. This mindset shift became my guiding principle. If things don't unfold as planned, it's an indication that something better awaits. In the end, it all falls into place. I got placed at Visteon, after passing 1 GD round, followed by 2 tech and 1 HR round. I've learned to trust that everything falls into place, and the idea that what's meant for me will come to me has been a source of comfort. Now, I feel content, and everything feels clear and purposeful.



Mayuri Balajee
4th Year

My Journey through the Honors Degree A Tale of What, How, and Why

As I journey through the captivating domain of AI & ML Technologies, gratitude fills my heart for the enriching experience the Honors program has bestowed upon me. It's more than just a set of courses; it's a profound exploration into the depths of artificial intelligence and machine learning. Today, I'm excited to share my adventure along the invaluable path of pursuing an Honors degree.

Now, you might be wondering, "What sets an Honors degree apart?" Well, it's more than a degree – it's a golden opportunity to dive deeper into the intricacies of AI & ML, a chance to not just learn but to truly master the subject. Pursuing an Honors degree demanded dedication to maintaining a CGPA of 7.5 or above and clearing all courses on the first attempt. Honors isn't merely a commitment; it's a promise to excellence, a transformative journey making it not just an academic feat but a leap into becoming a skilled and proficient AI & ML technologist.

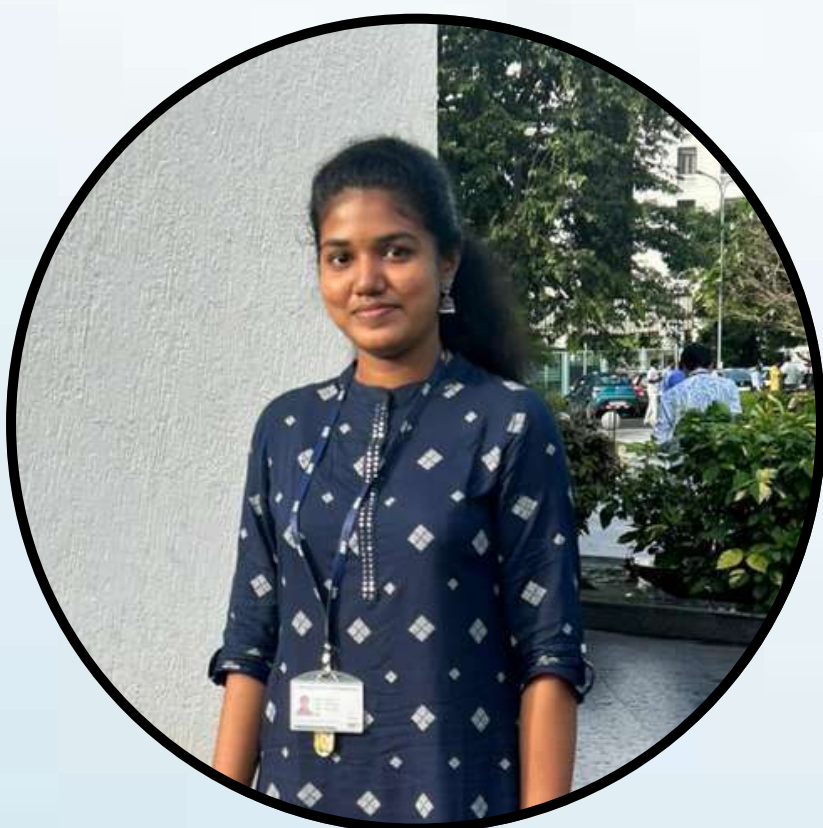
In our fifth semester, given a few enticing courses on the plate, we got to pick two - quite a tough yet exciting choice. Initially, juggling regular classes with honors courses scheduled after the usual hours, made me question if I could handle it all. But here's where the story takes a turn - our department didn't merely toss us into the deep end; they made sure to meticulously craft a learning experience that's not just enjoyable but also thorough and well-structured.

A heartfelt shoutout to our esteemed teachers, the guiding lights throughout this adventure. The knowledge they shared and their evident passion for the subject made learning not just enjoyable but truly enlightening. We dived into fascinating Machine Learning concepts, from foundational linear programming to the innovative realm of genetic algorithms and beyond, making algorithms more efficient for real-world applications. In parallel with theoretical studies, we engaged in diverse AI projects, covering object recognition, text classification, language models, image processing and more.

And here's the exciting part – this journey isn't just limited to our department. Students from diverse backgrounds can hop on board and opt for this course as a minor degree. Imagine collaborating with minds from various disciplines, bringing together unique perspectives and ideas. Honors electives, a subset of our program electives, promise a curriculum that's not only diverse and specialized but also tailored to what you're into. The courses you pick for Honors aren't just about gaining knowledge; they also count for your overall program – a pretty cool deal, right?

To our juniors, here's a friendly nudge – see the Honors path beyond a degree – it's a transformative journey, which not only amplifies your job interview success but also positions you as a dedicated scholar for advanced academic endeavors. With a robust research background, it becomes your gateway to stand out in postgraduate programs, shaping a promising future. It is an adventure that challenges, inspires, and equips you with the skills to make a significant impact in the ever-evolving world of AI & ML. So, are you ready for the adventure of a lifetime? Get ready for the ride!

Signing off with excitement and anticipation for the incredible journey that lies ahead for each one of us!



S Selcia
3rd Year

Karmaveerar Natya Nadagam

By Sushobanam Academy of Classical Arts

Date: January 2, 6:00 PM

Venue: Balagan Saraswathi Arts and Science College, Mukoodal, Thirunelveli

The event, set against the backdrop of the picturesque college campus, unfolded at 6:00 PM and brought to life the remarkable journey of one of **Tamil Nadu's most iconic leaders, Kamarajar.**

The performance, a collaborative effort of my guru **Smt. Seethalakshmi Vijay** along with the talented dancers of my dance group beautifully captured the essence of Kamarajar's life, highlighting key milestones, struggles, and triumphs.



The program commenced with an enchanting opening performance of a war scene that set the tone for the evening. The choreography seamlessly transitioned between **different phases of Kamarajar's life**, from his early years to his significant contributions as a political leader and advocate for education. Throughout the evening, the audience was treated to a series of featured performances, each meticulously choreographed to convey the emotions and societal impact associated with Kamarajar's life.



Pradhanya K
2nd Year



State Level Adventure Camp Experience

The State Level Adventure Camp, jointly organized by the Youth Welfare and Sports Development Department, Tamil Nadu State NSS Cell, and Periyar University, unfolded as a captivating odyssey in Yercaud from October 16th to 20th. Approximately 150 students from various Tamil Nadu colleges participated in this enriching experience, orchestrated by Dr. Senthil Kumar and Dr. S. Sathish in collaboration with Unity Of Youth.

The camp kicked off by dividing the participants into five teams, with each team hosting activities on specific days. I had the privilege of leading the Maragatham team, experiencing a surge of pride and responsibility.



The days commenced with flag hoisting at 6 am, setting the rhythm for the day, followed by unique activities such as NSS pledges, Thirukural, and thought-provoking academic sessions using innovative mediums like drama and origami.

Exploring the natural beauty of Mountain View and Pagoda Point and visiting Peeku Park and the Sterling Temple created a kaleidoscope of activities. Cultural performances under the starlit sky and a plastic eradication rally infused adventure with social responsibility. On the fourth day, the Maragatham team, led by me, Dr. Muthu Kumar and Mr. Jeevanandham orchestrated unforgettable moments like creative touches like making batches with leaves and flowers.

The Chief Guest's arrival, accompanied by parai performance, silambam demonstration, and an NCC parade, added vibrancy to the event. The day included a physical fitness game, showcasing the team's unique approach to responsibilities. Despite the demanding preparation, our efforts were well appreciated by the organizers.

The valedictory ceremony marked the end of this transformative experience. The joy of forging new bonds and the sadness of parting blended into a poignant farewell. The camp was not merely an adventure but a journey of self-discovery, personal growth, and enduring connections that lingered long after the campfire's last ember had dimmed.



Attaching leaf batch on State NSS officer, Senthil Kumar Sir



Supriya Abirami
4th Year



Innovation Crafted – Svasthya’s Journey at Smart India Hackathon 2023

The call of Smart India Hackathon 2023, a realm of innovation and fierce competition, promised us not just challenges but a journey filled with discovery and success. Little did we anticipate that our venture would unfold into a captivating tale of camaraderie, sleepless nights, and the joy of crafting something extraordinary.

Our initiation into the Smart India Hackathon 2023 began as eager participants in our college's internal hackathon, where 175 teams ignited the atmosphere with innovation. After intense ideation and coding collisions, Svasthya emerged among the top 100. AICTE's recognition then catapulted us from the local spotlight to the national stage, transforming the internal hackathon from a mere testing ground into a crucial stepping stone towards something much grander.



The excitement soared when Svasthya was selected for not just one but two problem statements at the Smart India Hackathon. Our sights were set on SIH1496 - Toys and Games by the Ministry of Education, AICTE, igniting our creativity to

craft a gaming platform that would transcend boundaries and generations.

As the hackathon beckoned, real-world hurdles surfaced. From booking tickets to making arrangements, last-minute curveballs tested our resolve. Heartfelt thanks to Dr. Shahina Ma'am and Dr. Joe Louis Paul Sir for their unwavering support. Their kind words motivated us amid challenges, making us feel encouraged and motivated, especially during last-minute ticket bookings and exams. Special gratitude to our mentor, Dr. Karthika ma'am, whose guidance served as a constant beacon throughout our journey. In navigating challenges, their steadfast support transformed obstacles into stepping stones. We are forever grateful to all the teachers in our department who invested in our success, thank you for being the pillars upon which our achievements stand.

The moment our team landed in Rajam anticipation filled the air. Unfamiliar surroundings and the hackathon venue's palpable energy brought a mix of nerves and exhilaration. Little did we know that the following days would be a whirlwind of challenges, sleepless nights, and a mosaic of new experiences. As the clock struck the start of the 36-hour hackathon, sleep became a distant memory. Fueled by coffee and code, every line written, every bug fixed, brought us closer to our goal. Our project aimed to revolutionize healthcare by integrating gaming with essential services and age-specific games to educate and promote well-being across diverse age groups in India, a vision that unfolded vibrantly in the tapestry of diverse minds converging in the pursuit of innovation.

In the sea of faces, we met collaborators, mentors, and friends. The exchange of ideas and skills, with each interaction adding a new thread to the rich fabric of our experiences. From networking with industry experts to learning from fellow participants, every encounter was a lesson in itself. The journey wasn't without



its rollercoaster of emotions—frustration, breakthroughs, and the ticking clock intensifying the pressure. Yet, a sense of camaraderie and shared passion fueled us to overcome challenges. The sleepless nights, challenges faced, and new faces met all contributed to a tapestry of experiences forever etched in our memories.

Surpassing 48 nodal centers, 55,000+ ideas, and 4,000+ colleges, Svasthya emerged as one of the Top 7 Finalists. The success of Svasthya was a result of the unyielding commitment and flawless teamwork of each member. Beyond the victory or defeat, what mattered most was the treasure trove of skills gained, lessons learned, and the indomitable spirit that would propel us towards future endeavors. As we reflect on the pages turned and hurdles overcome, this journey inspires us to reach higher, dream bolder, and embrace the unknown with unwavering determination. The hackathon may be a chapter concluded, but the story of Svasthya continues - a saga of creativity, growth, and the relentless pursuit of making a positive impact, marking the start of many more inspiring chapters.

- Team Svasthya (Selcia S, Vasundhara B, Priyamvada Pradeep, Sanjith Vikraman K R, Padhmapriya M and Narmatha R from 3rd year)

A Journey to Rank 5 in IEEEExtreme

Taking on the IEEEExtreme challenge was a leap into the world of coding, driven by a shared love for the craft and a desire to see how far we could push our limits. Little did we anticipate that this 24-hour coding marathon would not just challenge our individual coding skills but also test our teamwork, leading us to an impressive All India Rank 5.

Our team, consisting of Ajay S, Suraj P, and myself, understood the importance of preparation. We dove into studying various coding concepts, ensuring we were ready for the competition. Each of us brought unique strengths to the team, forming a well-rounded trio.

The competition was no walk in the park. It demanded more than just coding skills; it required teamwork, efficient time management, and smart decision-making. We crafted a strategy to maintain balance: every two hours, two new problems would be released. Two of us focused on the new problems while the third continued to work on the previous one. This ensured a dynamic approach and kept us on our toes.

Ajay started at 5 pm, Suraj at 8 pm, and I joined later, making sure our entry into the competition was staggered. Throughout the challenge, we stayed connected on Google Meet, offering support and insights whenever one of us faced a hurdle.

Leaving the competition at different times—Ajay at 1 am, Suraj at 3 am—I held on till the end. We faced ups and downs, but our teamwork and strategy kept us going.

Suraj emerged as a standout contributor, solving more problems than the rest of us. His exceptional problem-solving skills added a valuable edge to our team dynamics.

Our journey was not about individual success but about what we could achieve together. Maintaining a good rank throughout, we faced the final hour with determination. In those crucial moments, our strategy paid off, propelling us to a remarkable Rank 5.

IEEEExtreme was more than a competition; it was a chance to grow. Tough coding problems taught us valuable lessons, and working as a team made us resilient. Our strategy of tackling problems in a balanced way turned out to be a winning formula.

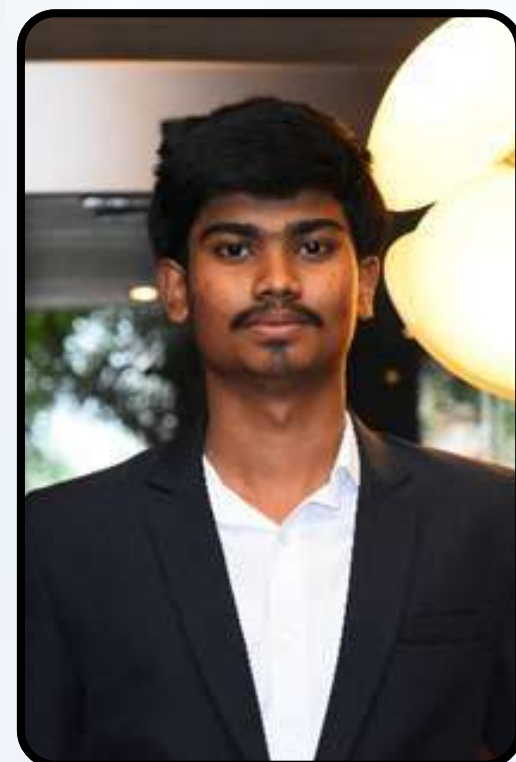
This achievement is not just about a rank; it symbolizes what a united team can accomplish. The lessons we learned and the friendships we forged will stay with us as we tackle new challenges in our coding journey.

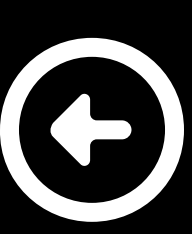
Securing Rank 5 in IEEEExtreme wasn't just about coding skills; it was about teamwork and determination. A special shoutout to my teammates, Ajay S and Suraj P, for their exceptional collaboration. Also, immense gratitude to IEEEExtreme for providing us with a platform to showcase our skills on a national level.

Suraj P
4th year



Saravanan J
4th year





STUDENT ACHIEVEMENTS

Nusaiba Afsheen R, Recipient of “Richard E. Merwin scholarship”

Nusaiba Afsheen R of **4th year**, Department of IT has become the recipient of the prestigious Richard E. Merwin scholarship for **Spring 2023**. The **current Chairperson of SSN IEEECS Student Branch Chapter** will be receiving **\$1000** as a part of the scholarship and serve as **the IEEECS Student Ambassadors for one year**. This scholarship is bestowed to select few from across the world by IEEE Computer Society to recognize and rewards student leadership among active student volunteers in IEEE Student Branch or IEEE Computer Society Student Branch Chapters who also show promise through their academic and professional efforts.



Sasmitha B, Recipient of “Making India Employable Award”

The **Making India Employable Awards**, held on **September 8th** at Novotel Mumbai International Airport as part of the **Making India Employable Conference & Awards (MIECA) 2023**, is a prestigious event that celebrates outstanding contributions to education, employability, and skill development. Co-hosted by the India Education Forum and India Employer Forum and supported by TeamLease Edtech, the event recognizes individuals and organizations in



these critical fields. Among the honorees was **Sasmitha Baskaran, a 3rd-year IT student and founder of Yukthi Smart Solutions**. She was awarded for her commitment to addressing public challenges, especially in providing education to individuals with physical disabilities. Yukthi's upcoming project aims to transform a slum into a technologically advanced community. She received the **under-25 category award for innovative thinking**, standing with figures like **Sridhar Vembu** from Zoho Corporation. The award was presented by **Mr. Raghunath Mashelkar**, a recipient of Padma Shri, Padma Bhushan, and Padma Vibhushan awards, adding prestige to her recognition.

“Team Yukthi” won 2nd place in VEC hackathon and 7th place in PSGiTech Hackfest hackathon

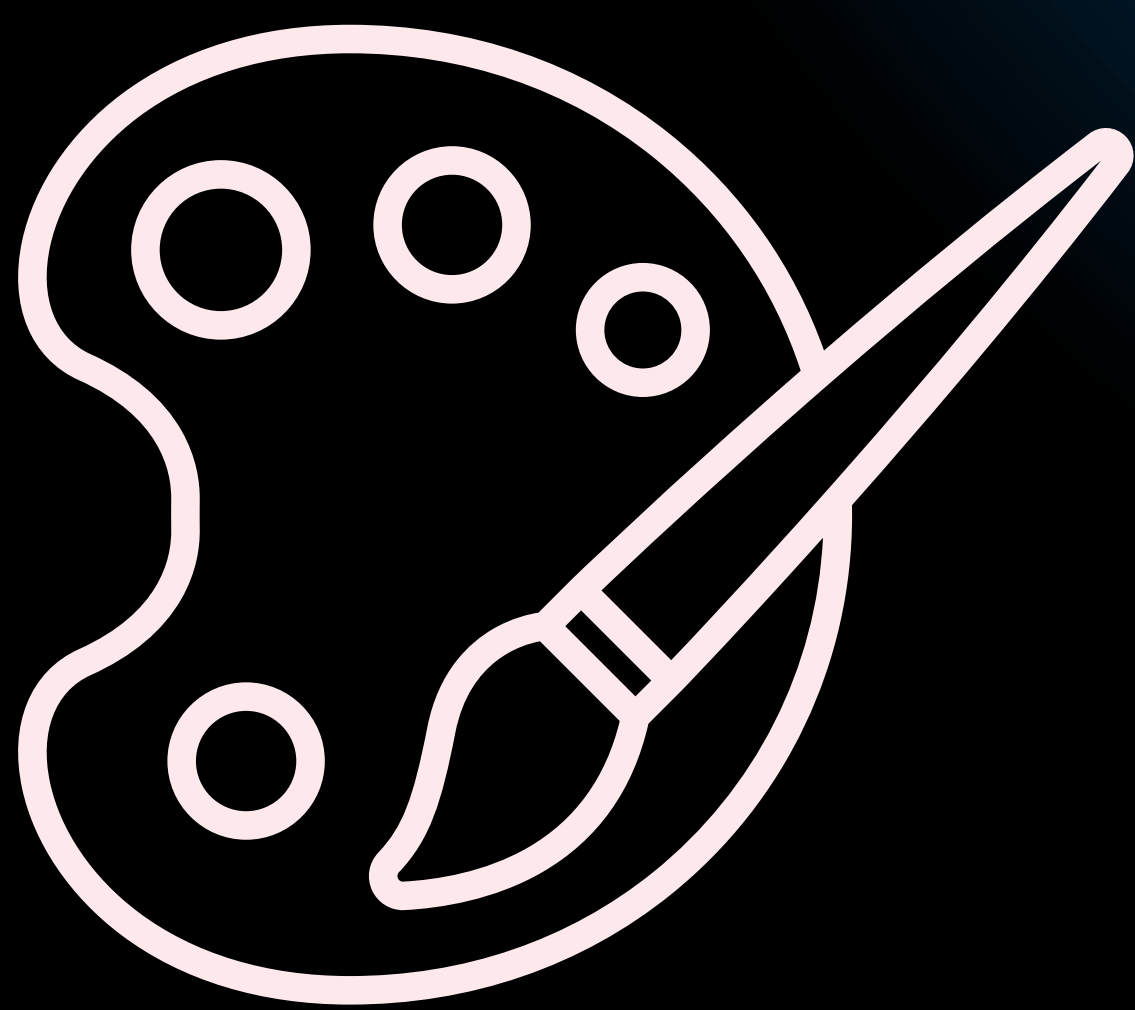
The team Yukthi, consisting of **Sasmitha B, Nithish S, Prithik N, and Sujay R** from the **3rd year**, successfully secured the **7th position out of 556 participating teams** in the **PSGiTech Hackfest Hackathon (24.08.23 to 26.08.23)**. Their project, "**Arivagam**," showcased a learning platform in the Smart Education theme. Arivagam is an online educational web platform designed to ensure equal access to education for various groups, including native speakers, typical students, individuals with dyslexia, and those with hearing impairments. More than just a web platform, Arivagam represents a vision for accessible and fair learning opportunities.



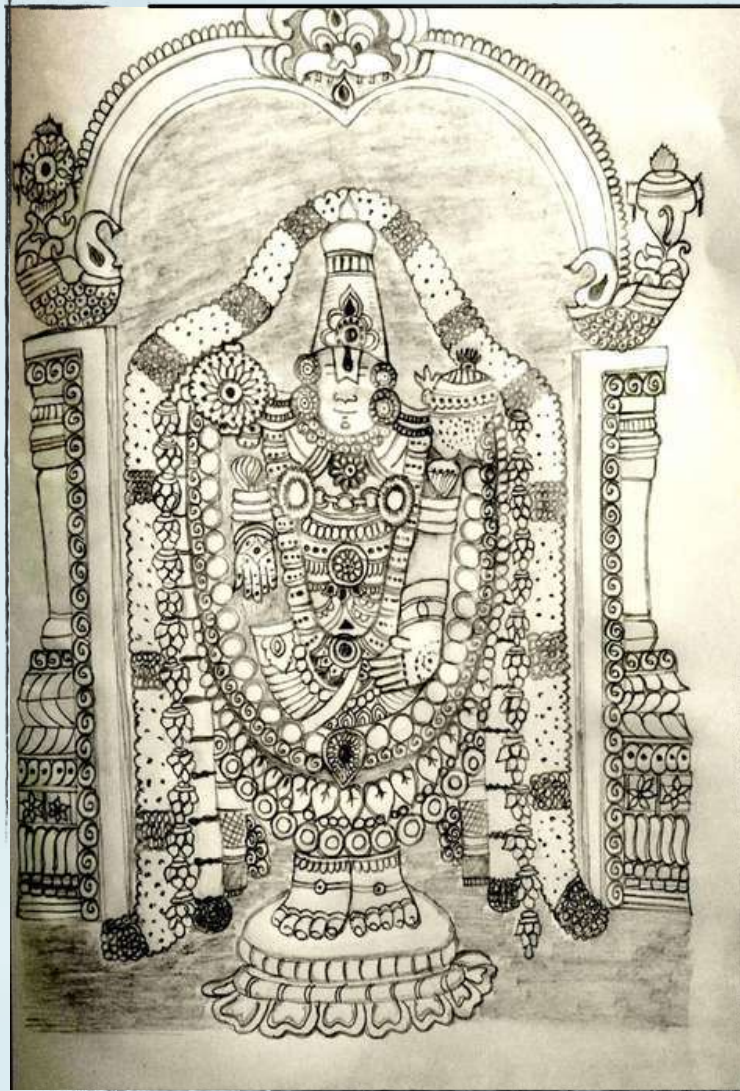
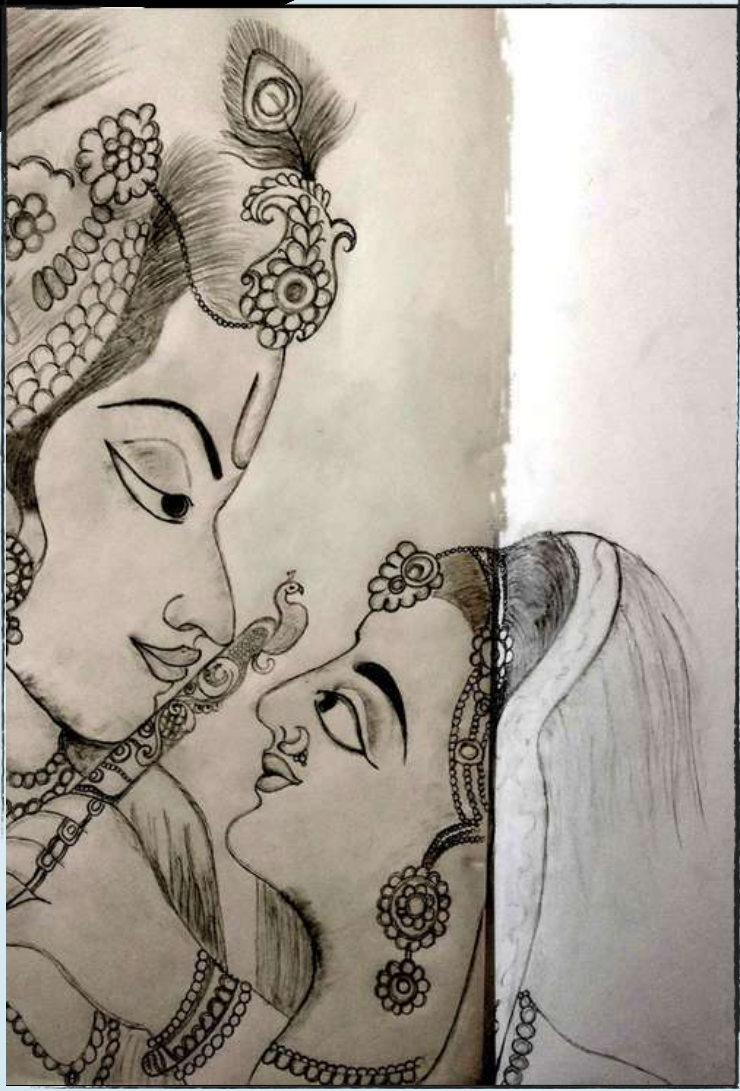
In yet another triumph, Team Yukthi emerged victorious once more, followed by the PSGiTech Hackfest Hackathon. The team took part in the **VEC National Level Hackathon** held in Telangana. Among the 80 teams that initially joined the competition, only 15 made it to the finals, and their team

secured an impressive 2nd place among these finalists, earning a memento and a cash prize of Rs.15,000. Our project centered around the theme of Smart Education, showcasing a visionary approach to empower housekeepers in facilitating better learning opportunities for their children.





ARTWORK



Vinitha Perumal
4th year

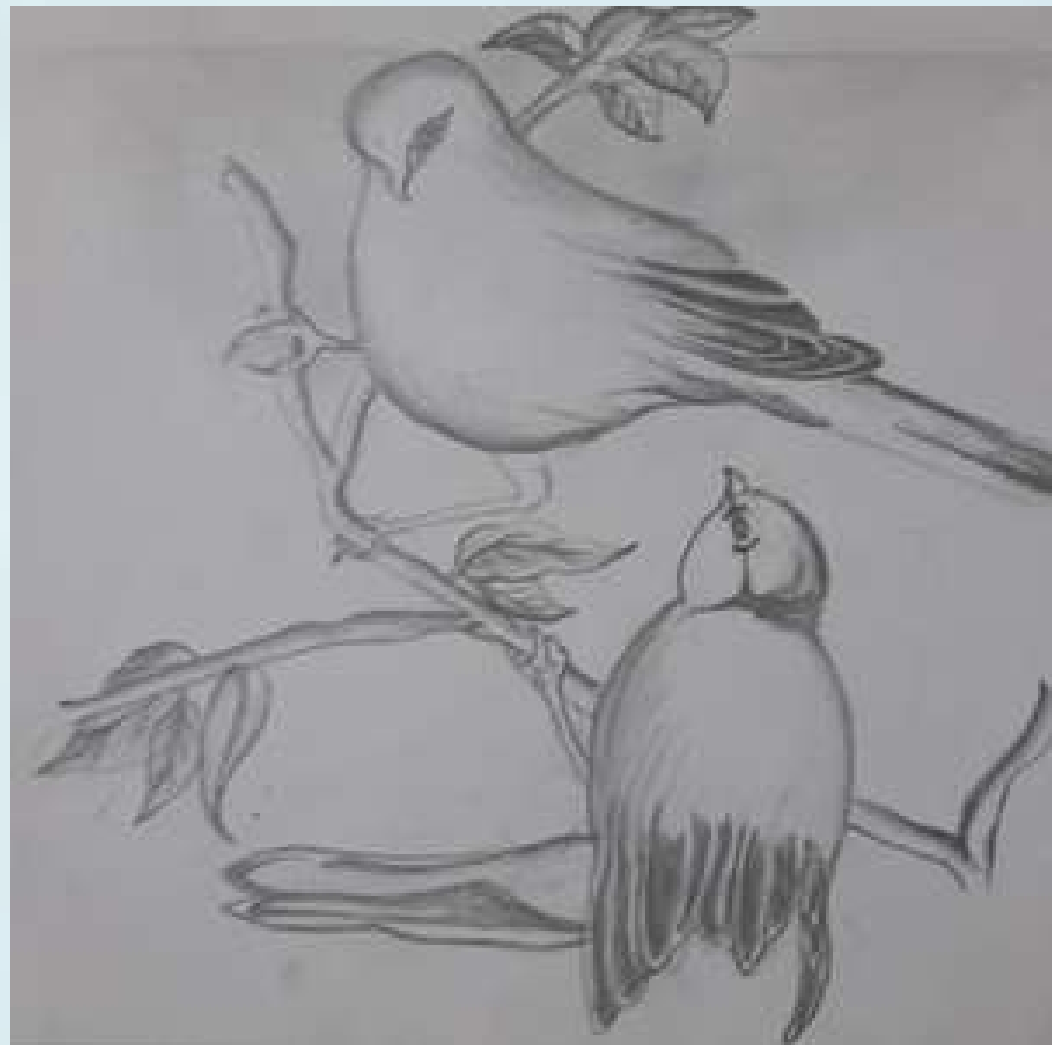
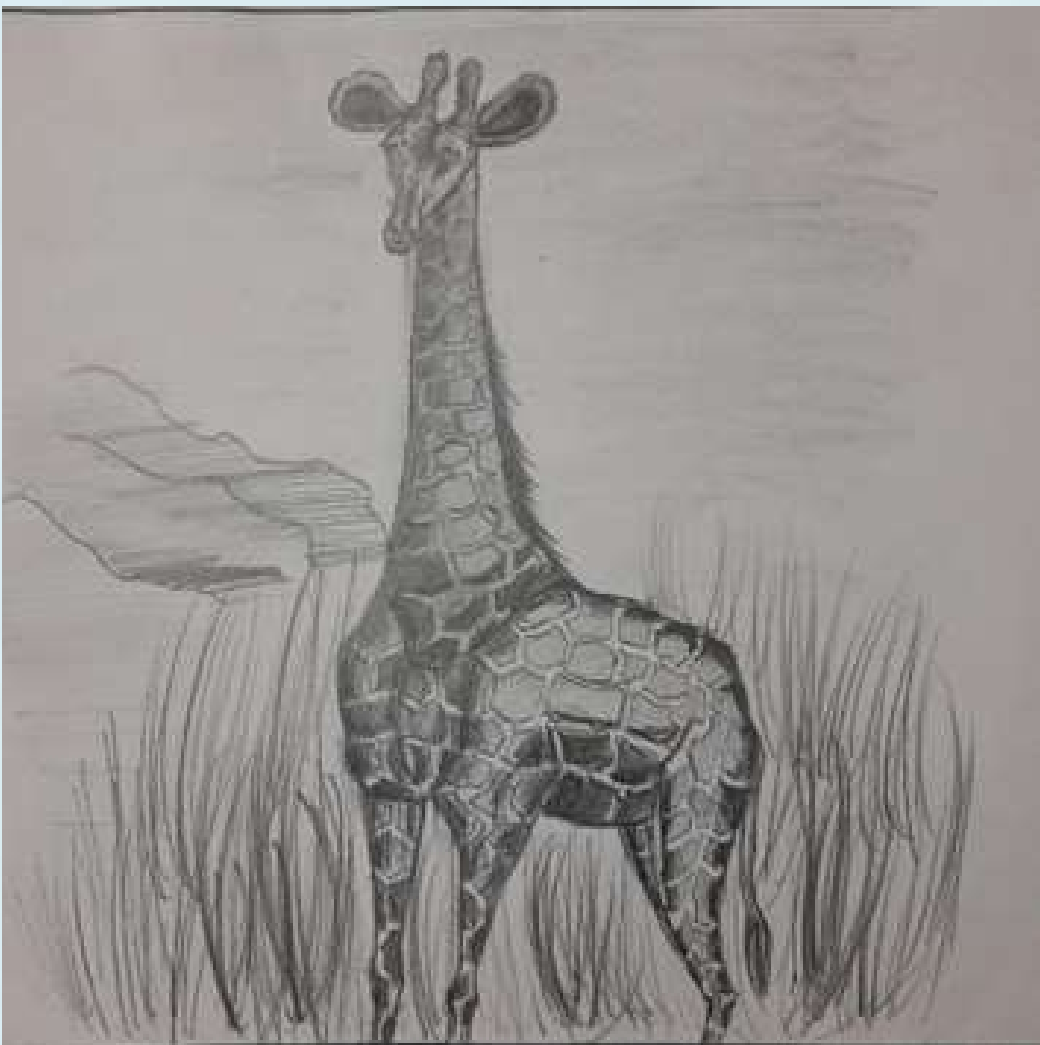


Tejshree
3rd year



Rafigathunisa D
2nd year



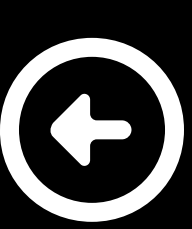


During the End Semester study holidays, my parents encouraged me to clean my home library, providing the perfect excuse to revisit my old sketches from my early teens. Among the stacks, I stumbled upon my lost sketchbook and the familiar Staedtler pencils that tingled with strong memories of a hobby I had given up due to lack of time.

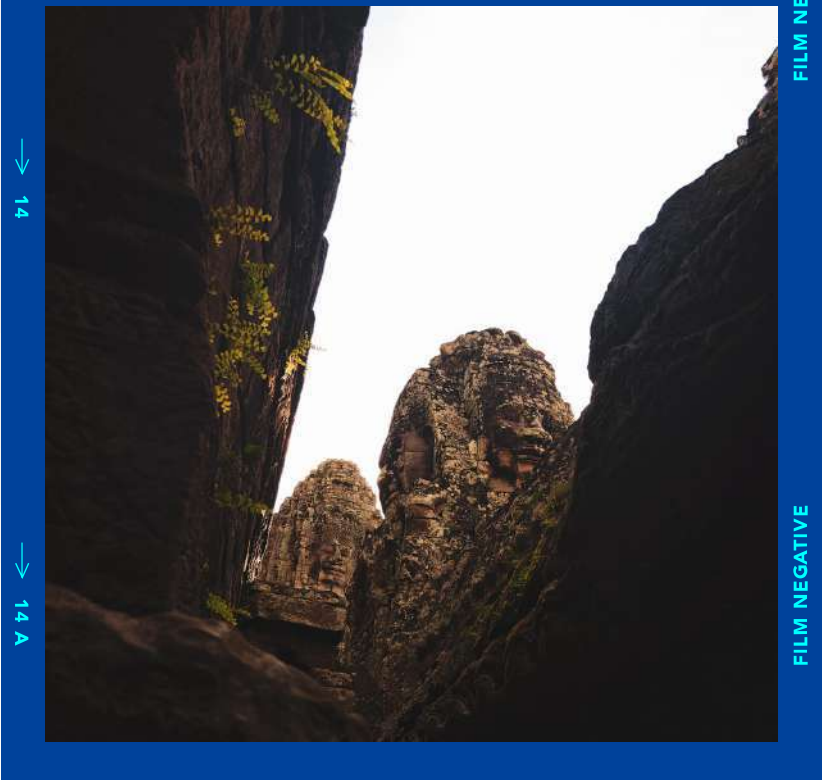
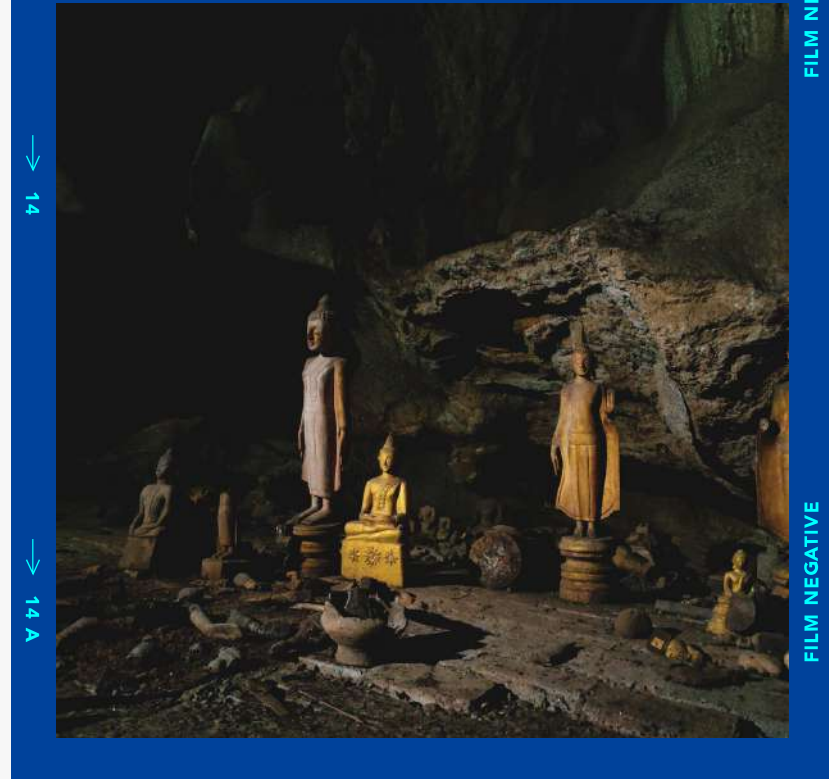
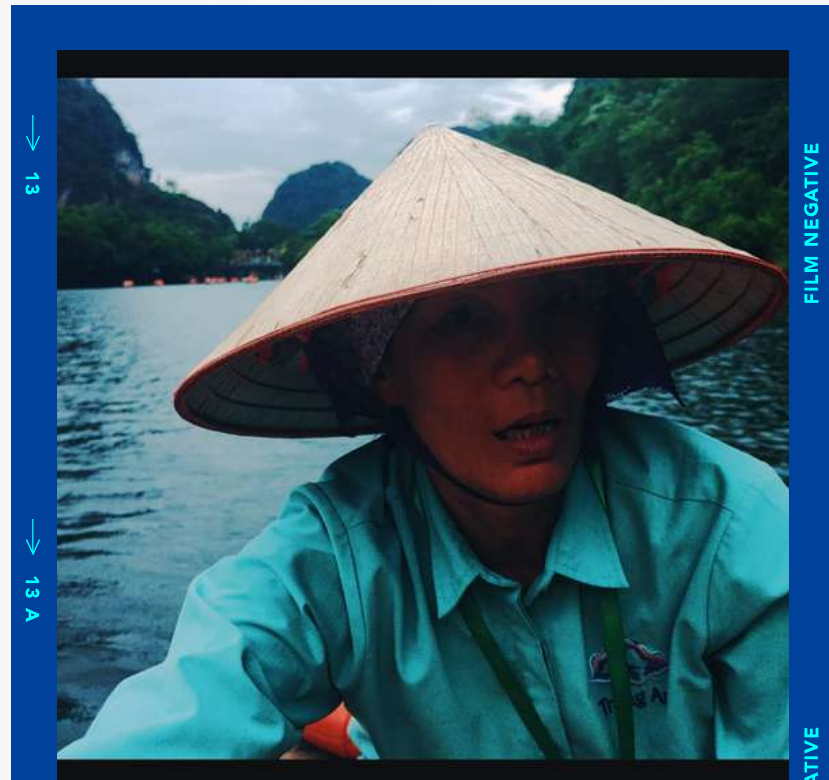
These sketches hold an interesting history. My Art teacher, Ms. Kamala, was never satisfied with my initial submissions, always sending my work back for improvement. Frustrated, I decided to dedicate 2 entire months to these sketches, ensuring each stroke was perfect, even taking off some days from school. I finally submitted them three weeks after the final deadline xD. But Kamala Ma'am was delighted, she put up copies of these on her staffroom walls and never took them down, even after I passed out of school.



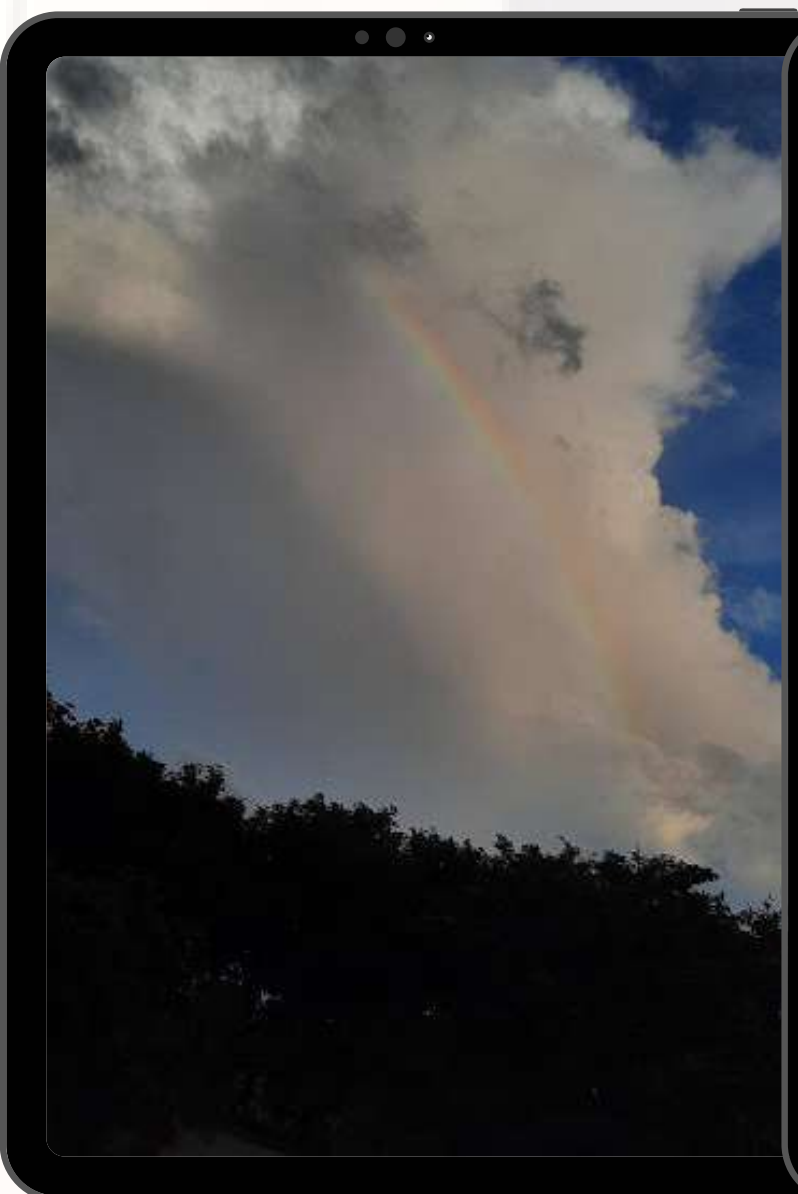
Sahithi MR
4th year



PHOTOGRAPHY



Shriram M S
4th Year



Harish A
4th Year



Bandipur Tiger Reserve's new sensation--Bolgudda Male



Male Leopard from Bandipur



Manojkumar S

3rd Year

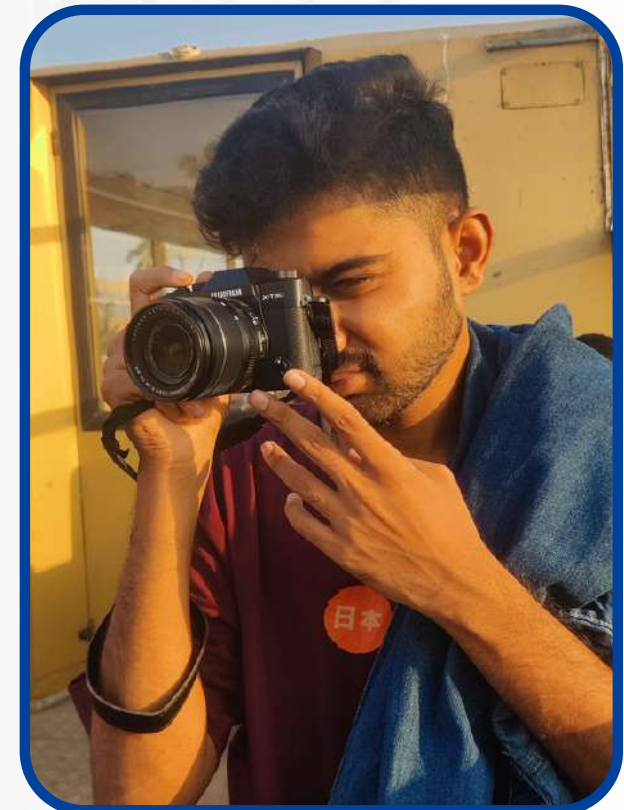
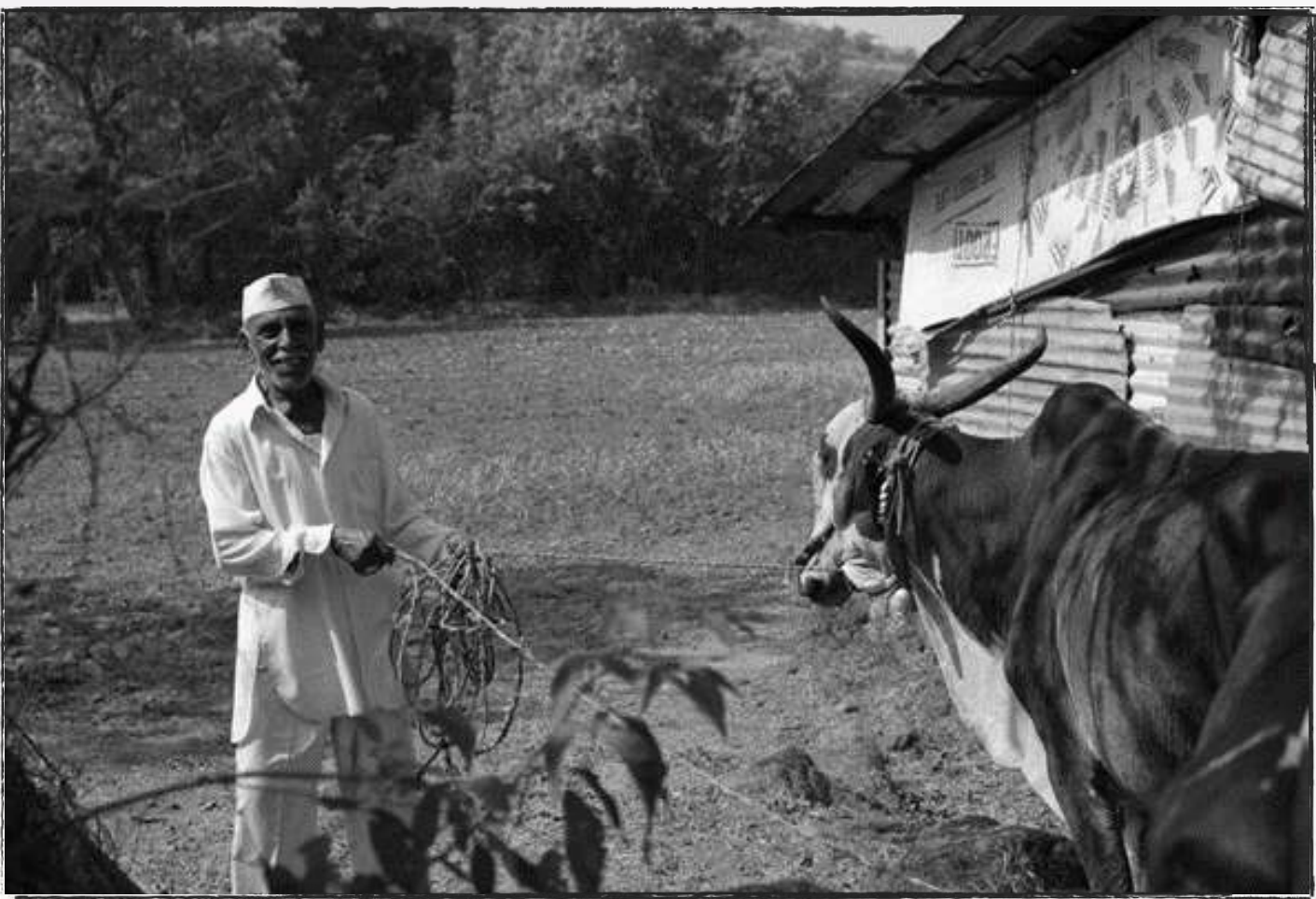
Check out his [Insta](#)

This leopard sighting happened during our final safari of the trip, and I had already kept my expectations low as the third safari is usually dry. About an hour into the final safari, our driver received a call from the other side of the forest, informing us of a leopard sighting. We rushed to the location, and we came to know that there was a leopard walking boldly on the safari track, heading straight towards them before disappearing into the bushes.

Our drivers speculated that the leopard might make its way to a nearby waterhole, so we patiently waited for about 30 minutes. True to their prediction, the leopard arrived, showing no concern for the presence of our safari vehicles. After a brief encounter, it disappeared into the bushes once again. We decided to change our vehicle's location, following our driver's expectation of its route. The leopard eventually came near our new position, getting as close as 5 meters from me. It was the closest big cat encounter I've ever experienced.

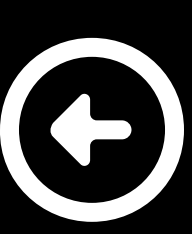


Woolly-necked Stork



I took this picture in Bhushi Dam, Lonavala, Maharashtra. It's a hill station near Mumbai, and has lovely views. This man lives with his wife and his cows under a small hut, and that's pretty much it. As a person who lives in a city, it was a little astonishing to see them live with no electronics. It was a very beautiful reminder that humans only need nature to survive and everything else is a luxury not a necessity.

**Vetrivel M
4th Year**



POETRY

Hometown

I've been there once.
In my recollection,
The brown clay under my feet,
Smooth floors with no special tiles or sofa seats,
Doors wearing thick frames of wood, as if for a picture,
A look within shows
One long chain of paths till the very backyard,
The dried up well with a pulley,
Pair of sparrows singing on the roof
And a cowherd pampering his hoofed children,

Grandpas leisure with one leg up on the verandah,
and women carrying woven baskets stop
to talk of family affairs on the street,

Fresh breeze with grassy smells
as the nearby river gurgles in my ears,
groups of boys laugh behind every tree
and a few lone cars break the scenery,

the old priest in white, makes his morning way to
welcome few guests from afar.

Family of mere acquaintances.

They stand out in my memory
from
that place holding footprints of my father's father,
a home that shades my people in different colors,
ones I've never seen before
and won't ever see elsewhere.

Poet's Note:

This poem is inspired by a visit to my village hometown, relatives' house and the local temple there.



Vaishnavi Anand
4th year

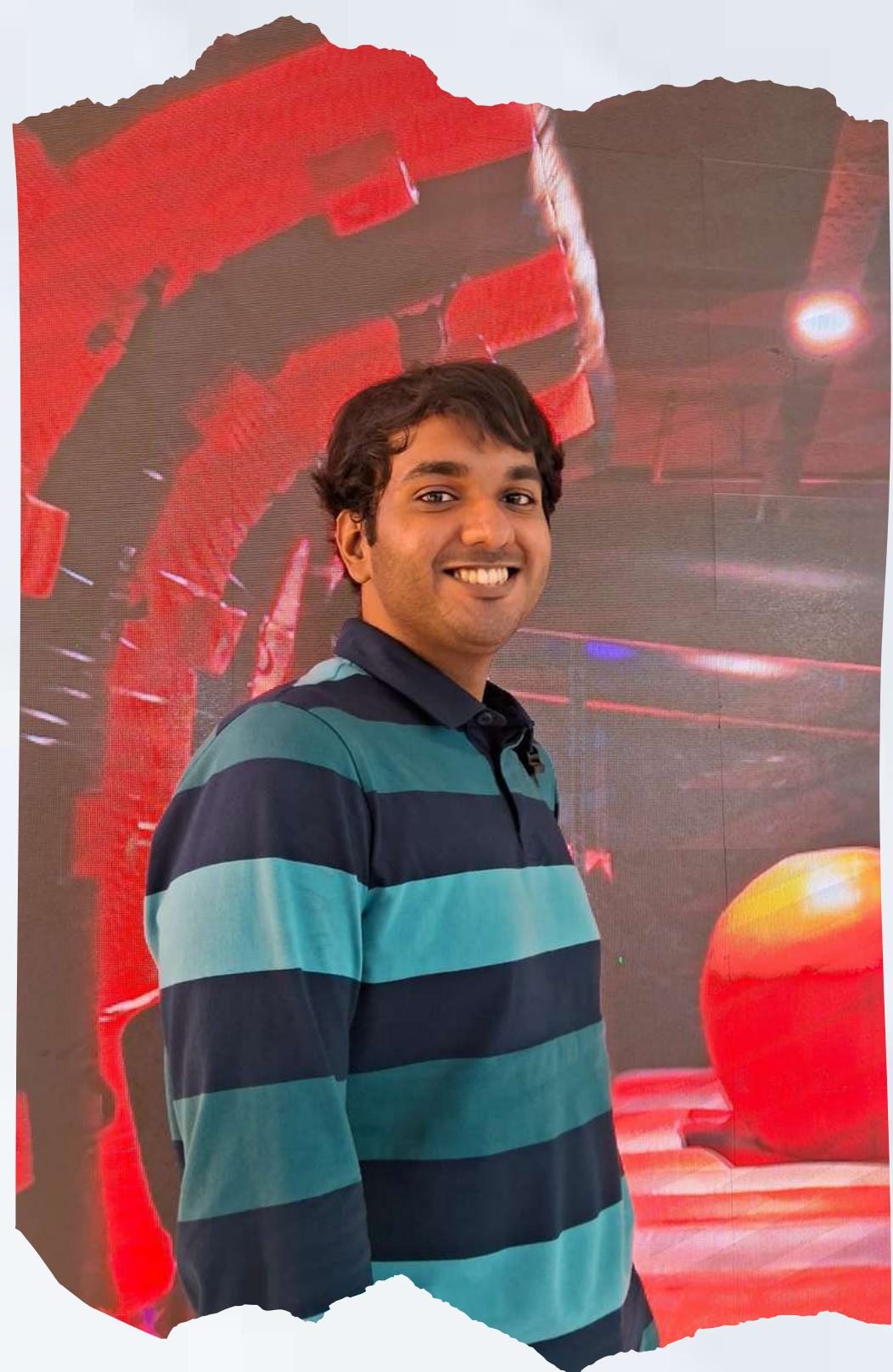
Sign your Smiles

Sign your smiles
 To carry your name
 They will travel
 And bring you fame

Neither power
 Nor all guiles
 Get fond attention
 As benign smiles

Your aroma
 Spreads around
 In other minds
 A silent sound

When your name
 Rings a bell
 The absent face
 Casts a spell



Aravind V
4th year

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December'23