Department of Information Technology presents
IdentITy
Half Yearly Newsletter

In This Issue

- Inter and Intra Department Events
- Insights into Placement & Internship Activity
- Student Accolade
- Faculty Corner
- Technical Article
- Non-Technical Article
- Alumni Channel

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Letter from HoD

Greetings!!!

With immense pleasure we present to you the current issue of identITy highlighting the activities of the department. We share the department activities such as the international conference ICCCSP'22, FDP conducted in association with Intel on AI and data science, Hack and Tackle – the annual hackathon and other workshops conducted in the domain of Industry 4.0. Our students were offered two One-Credit courses on intelligent mobility. This edition shares the trends of placements and interns offered to the students. In addition, it has many articles penned by our students sharing their experience as emerging entrepreneurs, IEEE Richard Merwin Scholar and as Google Women engineers. Our alumni have given an insight on after college life as researcher and as IT professional by sharing their thoughts. And, as usual the artistic talents in the form of poems, photos and art works are awaiting to mesmerize the readers.

Dr. C. Aravindan,

Professor & Head of Information Technology

At this juncture, we would like to express our sincere, heartfelt gratitude to the management, students and faculty for their valuable contributions, constant encouragement, and support.

Wishing you an engaging reading!!!

Hearty Welcome

Welcome

Aboard

We are glad to welcome

Mr. B. Senthil Kumar, Dr. E. Suganya and Dr. J. Betina Antony to the IT faculty family

Mr. B. Senthil Kumar – Assistant Professor - SSN Institutions is at SSN College of Engineering since June 2005 and is currently an Assistant Professor in the Department of Information Technology. He received his B.E. degree in Computer Science and Engineering from Bharathidasan University, Trichy, India, in 1999, and M.E. degree with distinction in Computer Science and Engineering from Anna University, Chennai, India in 2005. His research works are published in the proceedings of leading NLP conferences – ACL, EACL, LREC, FIRE, SEMEVAL.

Dr. E. Suganya – Assistant Professor - SSN Institutions has over 4 years of teaching experience and 3 year of Research experience. She received her B.Tech (IT) degree from B.S.A Crescent Engineering College, Chennai M.E. in Computer Science and Engineering from Anna University, Chennai and Ph.D. from Anna University, Chennai in the area of Data Analytics and Optimization. Her current research areas of interest include Data Analytics, Data mining, Optimization Algorithm.
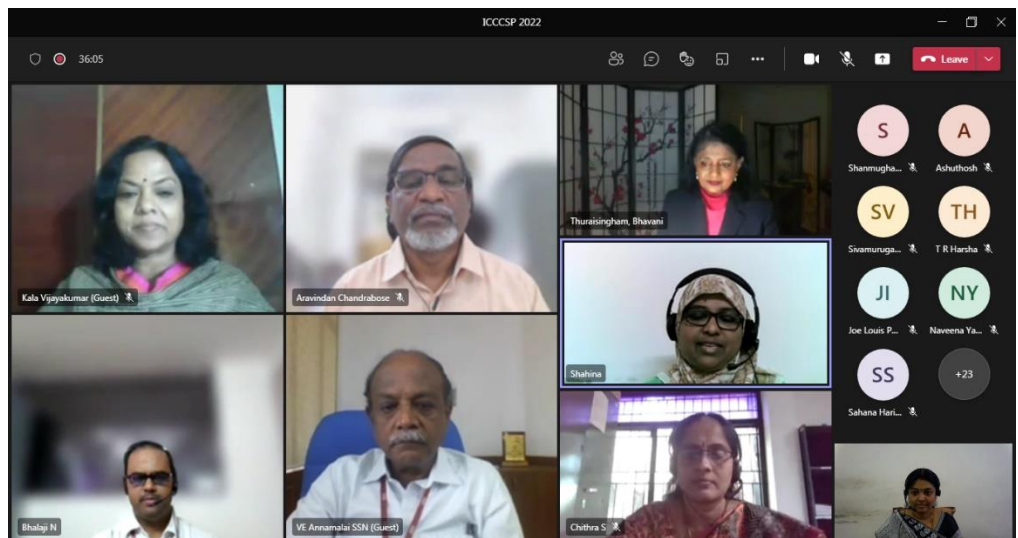
Dr. J. Betina Antony – Assistant Professor - SSN Institutions finished her bachelor's in Computer Science and Engineering from SSN College of Engineering in 2012 and her Post graduation in Software Engineering from College of Engineering, Guindy, Anna University in 2014, for which she secured gold medal for being the first rank holder. She secured her PhD (FT) from Anna University, Chennai, Tamilnadu, India in Information and Communication Engineering specializing in the field of Natural Language Processing in the year 2019. She has also worked as a corporate trainer in Wipro. Her current research areas include Machine Learning, Natural Language Processing, Text and Data mining, Deep Learning.

Highlights of Department Events

6th International Conference on Computer, Communication and Signal Processing

The Department of Information Technology organized the **IFIP 6th International Conference on Computer, Communication and Signal Processing (ICCCSP 2022) during February 24–25, 2022**. The conference was supported by the Machine Learning Research Group (MLRG) of SSN along with the Speech and Image Processing and Internet of Things (IoT) research groups of the department. The proceedings of the event will be published by **Springer** to the global research community and the event was financially supported by SSN Institutions.

ICCCSP 2022 highlighted the **rapidly developing technologies related to artificial intelligence (AI) and cyber security**. The conference acted as a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, concerns, and solutions adopted in these fields. The conference received 111 paper submissions through the EasyChair conference management system from authors across India and various other countries, including the **USA, Malaysia, Singapore, Dubai, Bangladesh, and Sri Lanka**. With tremendous support from 100 experts in the fields of data science and cyber security the papers were scrutinized. Each submission was comprehensively reviewed by at least three reviewers, and their comments were communicated to the authors before the conference. The Program Committee accepted the top 25% of submissions, with contributions coming from globally recognized universities, such as the **National University of Singapore, the University of Texas, and Oakland University, research labs at Accenture and Cognizant, national research labs such as the National Informatics Centre, India, and SAMEER-CEM, India, and other universities such as CEG and VIT.** All 23 presented papers were
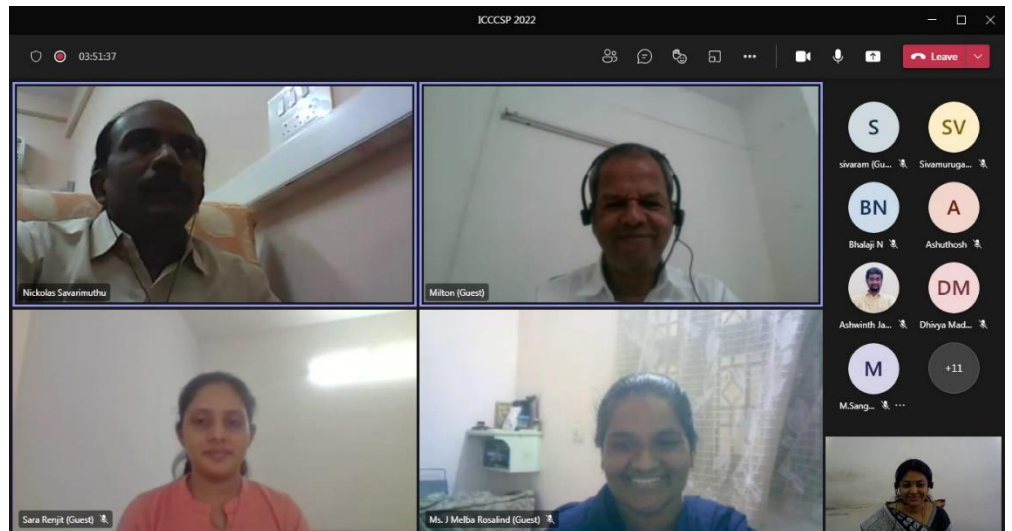
Prof. C. Aravindan, HoD

ICCCSP'22

Dr. N. Bhalaji, ASP

again reviewed by the session chairs and their comments were communicated to the authors to allow for revisions prior to publication. The final submissions were checked by the Program Committee to ensure that all the comments had been addressed.

ICCCSP 2022 started with a series of three parallel workshops on February 23, 2022, on the topics of **Text analysis and Information Extraction and Retrieval (TIER 2022), Microservices and Internet of Things (MIoT), and Trends in Deep Learning for Speech, Image, and Video Processing (SIVP).** The workshops had international and national speakers from industry and academia to share their expertise with 120+ researchers and students across the country. TIER 2022 was the 6th workshop in this series conducted by the Machine Learning Research Group of SSN. It had 28 participants and the sessions were handled by M. Anand Kumar, NITK Suratkal, India, and Kamal Raj, Saama Technologies, India. A hands-on session on BERT models for Indian languages was delivered by D. Thenmozhi and B. Senthil Kumar of SSN. The MIoT workshop was conducted by the IoT research group of the Department of Information Technology, SSN, and had 28 participants. The sessions with demonstrations were presented by Sripaul C. Asokan, PayPal, USA, Nakeeran Annamalai, Chewy, Inc., USA, and R. Vinob Chander, SSN, India. The SIVP workshop was supported by the Speech and Image Processing research group of the Department of Information Technology, SSN. The workshop had 74 active participants who were engaged by Ashwin Shanmugam, Mitsubishi Electric Research Laboratories, USA, V. Masilamani, IIIT DM Kancheepuram, India, and Subham Tiwari, Tech Mahindra, India. The conference was inaugurated on February 24, 2022, amidst the presence of Kala Vijayakumar, President of SSN Institutions, Bhavani Thuraisingham from the University of Texas at Dallas, as the guest of honour, and V. E. Annamalai, Principal of SSN Institutions, along with the Head of the Department of Information Technology, faculty members, participants of the conference, research scholars, and students of SSN. This was followed by the keynote lecture of Bhavani Thuraisingham from the University of Texas at Dallas, USA, who addressed **"Integrating Cyber**

Dr. S. Chithra, ASP

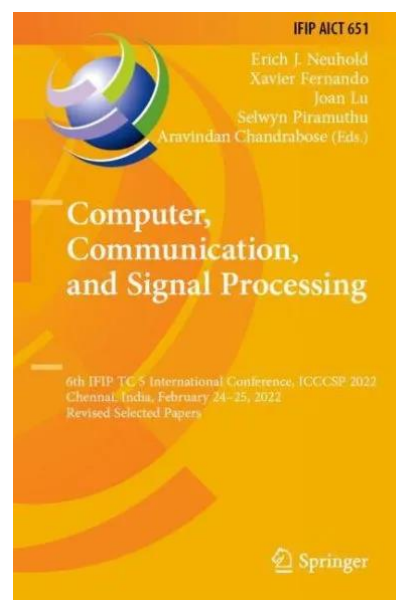ICCCSP'22

Dr. S. Karthika, ASP

Security and Data Science/Machine Learning with Applications in the Internet of Transportation and Healthcare". The second keynote was delivered by Sethumadhavan from Amrita University, India, on **"Crypto Vulnerabilities"**. On February 25, 2022, the second day of conference, Naveena Yanamala, an Associate Professor at Rutgers University and Adjunct Professor at Carnegie Mellon University, USA, delivered her keynote lecture on "Mirroring AI for IA - Intellect Augmentation that Enhances Human Lives". The papers were presented under three tracks, namely, AI and ML, cyber security, and IoT. The sessions were chaired by eminent experts from NITK Surathkal, NIT Trichy, the cyber security industry, and Pondicherry Technological University, along with the domain experts from SSN research groups. The research works showcased an insightful approach and solution for the problem discussed in the paper, amalgamating AI and cyber security.

FDP on AI and Data science with Intel oneAPI for Heterogenous computing
February 7-11, 2022

FDP on AI and Data science

Data has nowadays become a vital asset for an organisation, in several business sectors. The ability to comprehend and analyse such a resource is increasingly sought after in people and data professionals. Big data is a field that involves methods for analysing, methodically extracting data from, or otherwise dealing with data collections that are excessively huge or complicated. Data collection, storage, analysis, visualisation, querying, updating, and other big data difficulties are only a few examples. The FDP on AI and Data science with Intel oneAPI for heterogenous computing provided a thorough overview of the steps taken in developing a big data solution. The sessions of this programme emphasize on how each data analysis method has advanced over time. This FDP also assisted the attendees to enhance their skill set to compete, innovate, and generate new data solutions for the betterment.

oneAPI is a cross-industry, open, standards-based unified programming model that delivers a common developer experience across accelerator architectures for faster application performance, more productivity, and greater innovation. The oneAPI industry initiative encourages collaboration on the oneAPI specification and compatible oneAPI implementations across the ecosystem.

The FDP started with a brief introduction to **Artificial Intelligence and Data Science** where the participants had a great insight of basic algorithms and techniques involve in computer vision and text processing. A brief note on OneAPI assisted the participants to understand the benefits of its ecosystem and the 10 core components of oneAPI such as DPC++, OneDPL, OneDNN and so on. Setting up of Dev cloud Account and working on Intel Devcloud with hands-on session was introduced. The session took a fast pace when a basic "Hello world" program was built and ran on Intel Devcloud. The FDP involved both academic and industry-oriented approaches of handling data a parallel sessions which assisted the participants to familiarize with the jargons and the concepts. The significance of the cross-architecture software and Data Parallel C++ were shared and a hands on session to build the DPC++ blocks helped the users to work on the accelerated Data Processing using Intel Optimised Pandas on a real time dataset.

Great insights on visualisation using Tableau turned out to be an excellent interactive session. Building End to End Data Science Application on a Real time Problem and the introduction to MLops with its implementation along with the deployment in the DevCloud platform were the highlights of this FDP.

The event was organised by Dr. C. Aravindan, Professor and HoD, Dr. S. Mohanavalli, Dr. N. Sripriya and Dr. S. Poornima, Associate Professors.

Dr. T. Sree Sharmila, ASP
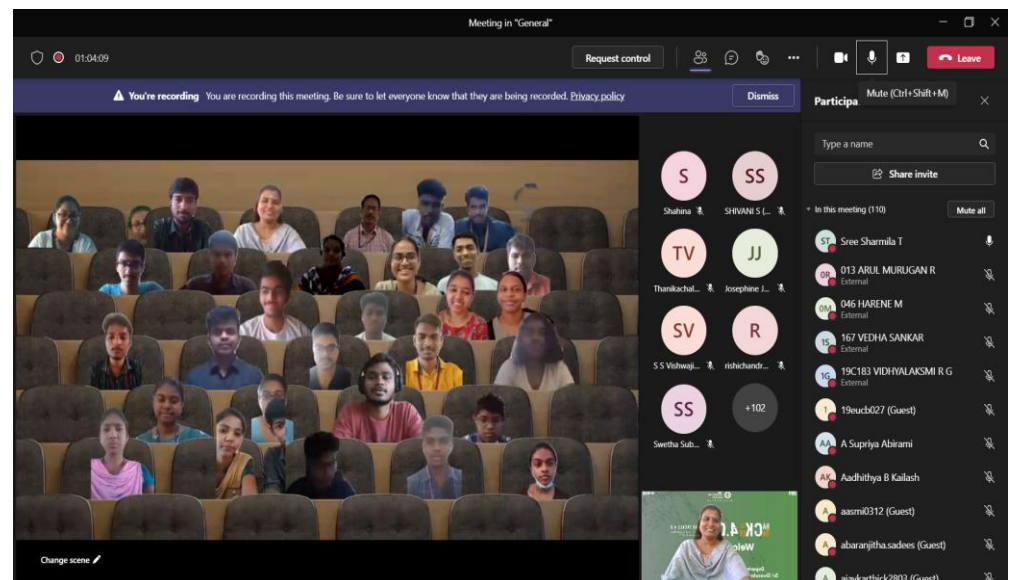
Hack &

Tackle 4.0

Hack & Tackle 4.0

The Department of Information Technology in association with SSN IEEE Student Branch and IEEE Computer society student chapter has organized a 24-Hour Hackathon, Hack & Tackle 4.0 during 10 -11 March 2022 through virtual mode. **It is an inter and intra college event that has two phases namely Ideation phase (Phase I) and a 24-hour Hackathon phase (Phase II).** The poster has been initiated on the beginning of Jan 2022 welcoming problem statements for 9 different tracks namely **environment, healthcare, women's safety, agriculture, social welfare, cyber security, AR/VR, computer vision, COVID, agriculture** from all over India. The registration for Ideation phase began on the second week of January 2022 and around 110 problem statements were received from 40 colleges across India. The proposals submitted by these teams underwent a review process and 53 teams were shortlisted for Phase I. The registration for the Hackathon phase began during second week Feb 2022. A total of 41 teams consisting of 153 students from various disciplines participated in the event virtually. The 41 teams were divided into 8 panels and around 30 expert members has trained the teams by providing valuable suggestions for improvement and evaluated team's performance in three evaluation rounds. The top 8 performances have been shortlisted for the power judging round. On evaluation based on the juries, the best 5 teams are awarded with cash prizes.

Organizers

The following faculty members organized the event:

- Dr. T. Sree Sharmila, Associate Professor
- Dr. V. Thanikachalam, Associate Professor
- Ms. J. K. Josephine Julina, Assistant Professor

The event was sponsored by Mr. Cooper, SSN IEEE Student Branch and IEEE Computer society Student chapter.

Ms. J. K. Josephine Julina, AP

Dr. V. Thanikachalam, ASP

Hack &

Tackle 4.0

Jury members

- Toufail Nadaf, Senior business process analyst, Mr. Cooper
- Kishore Ravichandran, Senior Application Support Engineer, Mr. Cooper
- Vijayan Ekambaram, Team lead - IT Service desk, Mr. Cooper
- Kabilan Mohanasundaram, Technical Lead, Mr. Cooper
- Muthu, Technical Architect, Mr. Cooper
- Fazul U, Business Analyst, Mr. Cooper
- Prabhu S, Lead Engineer, Mr. Cooper
- Naganandhini.G , Data Support Engineer, Mr. Cooper
- Kaviya A, Application Support Engineer ll, Mr. Cooper
- Shakila A, Software Engineer- Trainee, Mr. Cooper
- Hari Bala Chandru, Software Engineer - Trainee, Mr. Cooper
- DeviGanesan, Software Engineer -1, Mr. Cooper
- Suguna P, Software Engineer, Mr. Cooper
- Sivaram Shabari A, Graduate intern, Mr. Cooper
- Jithesh Kutty, Software Engineer, Mr. Cooper
- Haritha M S K, Software Engineer, Mr. Cooper
- Gowtham Padmanathan, Senior QA Engineer, Mr. Cooper
- Srishilesh P S, Software Engineer, Mr. Cooper
- Srirambharani S, Software Engineer, Mr. Cooper
- Pradeep P, Managing Director, NeoHorizon Analytics
- Prashanthram M , Software Development Engineer – Test, Amazon Development Center
- Sreegandh S, Associate Consultant, Sirius Computer Solutions
- Remo Antony Raymond, Product Manager, PayPal
- Dr.Ramalakshmi, Associate professor, Alliance University
- Sugeeth Diana M X, Assistant Consultant, Tata Consultancy Services
- Ananda Subramaniam, Senior Analyst, Eclerx Digital
- Joseph Selwin J K, Project Manager, Infosys

Dr. E. M. Malathy, ASP

Workshop on IoT with Arduino

Dr. V. Sivamurugan, ASP

Internet of Things with Arduino

The one-day workshop focused on embedded coding in **AT mega controller, Study of python interface for data transfer, and study on Arduino interface for data transfer**. Hands-on session for interfacing was covered with PWM, ADC and few hard ware applications. Detailed session on IoT application gave the participants the exposure to take various project on IoT applications.

The Speakers were Mr. Sitangshu Sekhar Biwas scientist from Atomic research center, Kalpakkam and Dr. Vinob Chander former Assistant professor, SSNCE conducted the hands-on session. **The workshop was organized by Dr. E M. Malathy and Dr. V. Sivamurugan on 9th April 2022 with 38 UG participants.**

The sessions showed the direction on how the **embedded system hardware and software developments** are aiming to bring new transformations into IoT based products to take advantage of growing IoT market. Real Time Operating Systems (RTOS) and microprocessors and microcontrollers research areas are explored for IoT transformation and students were taught the industry requirements for such applications.
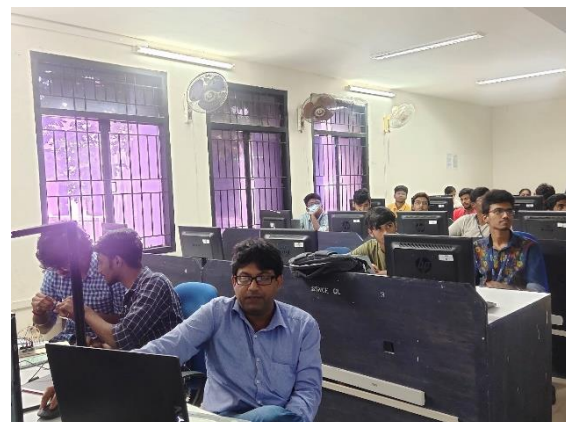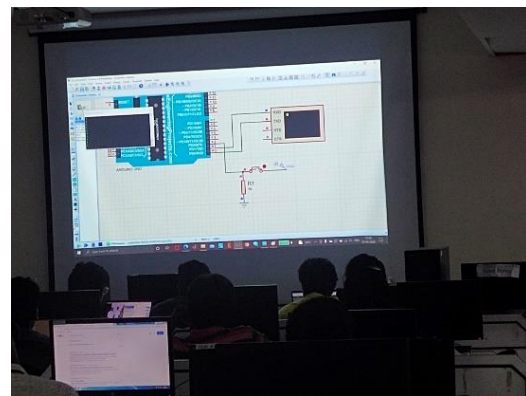
Dr. E. M. Malathy, ASP

One Credit Courses

One Credit Courses based on Intelligent Mobility

IT department conducted one credit course on **"Intelligent Mobility: Applied Computer Vision and Deep Learning"** once again this semester from March 2022-May 2022. An external expert, Dr. Vijay John, research scientist from RIKEN University, Japan, was the course instructor. The 4th Sem and 6th Sem UG student from various department participated and attended the course. 58 students successfully completed the course through online mode. The course gave a **fundamental approach to computer vision and various algorithms and their pros and cons** helped student to better understand the the current key research issues in computer vision.

https://www.youtube.com/watch?v=XpszoB67NAI

Additionally, another course on one credit titled **"Project Based Study on Intelligent Mobility"** was also conducted for 8th sem students from March 2022- June2022. It was completely an experiment-based course. Around 20 students participated the course who had previously completed the level 1 of this course. This course helped students to **analyze and evaluate critically the practical application of the building and integration of computer vision algorithms. Experiments to implement the fundamental practical approach in deep learning was aimed to give clear directions**. The course leveraged and demonstrated the awareness of the current key research issues in computer vision and students were able to implement experiments on certain application in computer vision.

The course coordinator was Dr. E.M. Malathy, ASP.

FDP on IoT, AI and Blockchain: Insights and Open Challenges (IAB 2022)

Prof. C. Aravindan, HoD

IAB'22

Dr. I. Joe Louis Paul, ASP

Dr. C. Aravindan, Professor and HoD, Dr. I. Joe Louis Paul, ASP, Dr. S. Sasirekha, ASP, Dr. R. Swathika, AP, Dr. N. Radha, AP, Dr. A. Sandana Karuppan, AP, conducted a 5-day FDP on "IoT, AI and Blockchain: Insights and Open Challenges (IAB 2022)" during March 1 -5, 2022. The total number of participants was 42.

Objective

The primary objective of the 5-day FDP was to **enrich the faculty members, research scholars and industry experts with modern trends in the fields of IoT, Artificial Intelligence, and Blockchain**. The FDP is divided into several modules falling under the umbrella of Artificial Intelligence including Machine Learning, and Blockchain and Internet of Things.

Resource Persons

- **Dr. Syed Ibrahim S P**, Assistant Director - International Relations & Professor, School of Computer Science and Engineering, Vellore Institute of Technology - VIT Chennai, Tamil Nadu, India.

- **Dr. Rahul Raman**, Assistant Professor, Department of Computer Science and Engineering, IIITDM, Kancheepuram, Chennai, Tamil Nadu, India.

- **Dr. B. Bharathi**, Associate Professor, Department of Computer Science and Engineering, SSN College of Engineering, Chennai, Tamil Nadu, India.

- **Mr. Ramamurthy Surya Narayanan**, Head of Engineering - IoT and Video Surveillance, Bharti Airtel, Bengaluru, Karnataka, India.

- **Mr. Madhusudan Shekar**, Head of Solution Engineering, APAC & Japan Google, Bengaluru, Karnataka, India.

- **Dr. Ashok Kumar Das**, Associate Professor, Center for Security, Theory and Algorithmic Research, International Institute of Information Technology (IIIT) Hyderabad, Telangana, India.

Dr. S. Sasirekha, ASP

IAB'22

Dr. N. Radha, ASP

- **Mr. Veerakumar M**, Sr. NLP Engineer, **Ms. Varshinidevi B**, ML Engineer, **Mr. Abhishek Purandare**, ML Engineer OptiSol Business Solutions, Chennai, Tamil Nadu, India.

- **Mr. Balaji Rajamani**, Director – Delivery of IoT projects, Cognizant, Chennai, Tamil Nadu, India.

- **Mr. Prakash Kannaiah**, Associate Manager, Emerging Technologies, Chennai, Tamil Nadu, India.

- **Mr. Praneeth R**, Sr. ML Engineer **Mr. Balamuruga M**, ML Engineer, OptiSol Business Solutions, Chennai, Tamil Nadu, India.

- **Dr. Sanjeet Kumar Nayak,** Assistant Professor, Department of Computer Science and Engineering, IIITDM, Kancheepuram, Chennai, Tamil Nadu, India.

- **Dr. N. Bhalaji**, Associate Professor, Department of Information Technology, SSN College of Engineering, Chennai, Tamil Nadu, India.

- **Dr. Raja Kumar Murugesan**, Head of Research for Faculty of Innovation and Technology, Taylor's University, Subang Jaya, Selangor, Malaysia.

- **Dr. Santosh Kumar Vipparthi**, Assistant Professor, Mehta Family School of Data Science and Artificial Intelligence, IIT, Guwahati Assam, India.

- **Dr. K. B. Sundhara Kumar**, Assistant Professor, Shiv Nadar University, Chennai, Tamil Nadu, India.
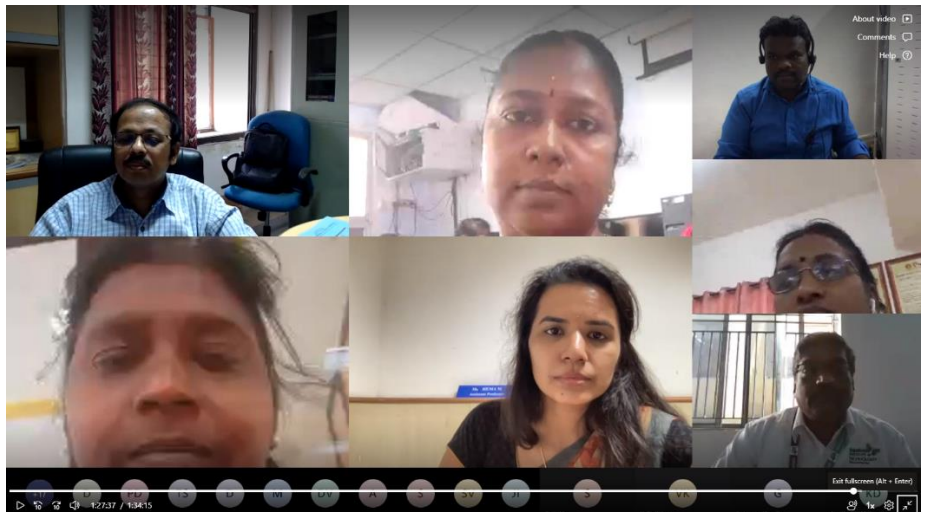
Dr. A. Sandana Karuppan, AP

IAB'22

Dr. R. Swathika, AP

Major Topics Covered

- Introduction to Artificial Intelligence

- Machine Learning Approaches for Computer Vision

- Demo: Machine Learning Models and its Applications

- Internet of Things - Landscape of Applications and Adoption Challenges

- Calculus of MLOps

- Blockchain Technology and its Intact on AI/ML Security for IoT Applications

- Demystifying Natural Language Processing with Industrial Use Cases + The Emergence of MLOps

- IoT and Data Analytics

- Demo: An IoT Based Smart Applications using LabVIEW

- Industrial Applications of Computer Vision and their Implementation on IoT

- Cyber Security Solutions for IoT-enabled Infrastructures using Blockchain Technology

- Blockchain: Industrial Use Cases & Demo

- Industry 4.0: Digital Transformation

- ML for Computer Vision: Research Challenges

- Creating a Cloud-deployable Machine Learning Model with Flask Framework

Outcome

IAB 2022 provided a forum to **exchange views, ideas & the latest innovations in the field of IoT, AI and Blockchain**. IAB 2022 offered learning on basics, identifying open and potential problems, emerging trends & challenges in the field of IoT, AI and Blockchain. Members of the research and academic community were be able to interact on cutting-edge and ground breaking topics in IoT, AI and Blockchain. Participation in this FDP enabled the faculty members, research scholars and industry experts to update their research and pedagogical skills.

SSN

Incubation

Foundation

Program by SSN Incubation Foundation

SSN Incubation foundation and SSN School of Management conducted a Two-day orientation program for prospective faculty entrepreneurs on the topic of **"A Business Plan Perspective To Your Product Ideas**" for the faculty members of SSN College of Engineering and Shiv Nadar University Chennai on March 29 &30, 2022.

The resource persons were Mr Kabaleeswaran Murugan, Independent consultant and Dr K.Hariharanath, Director, SSN School of Management.

The objective of the orientation program was to know:

- When you have ideation for a new product or service, how do you take it to the market?
- What are the essentials?

A basic and preliminary exercise to align ideas towards new product development (NPD**) understanding of Market dynamics and business plan** was conducted. The program had 32 faculties (30 from SSNCE and 02 from SNU, Chennai).

The program was coordinated by Dr. N. Bhalaji, Associate Professor, Department of IT & Chief Coordinator SSNiFound.

Dr. N. Bhalaji, ASP

IIC

Workshop

Dr. S. Chithra, ASP

IIC Activity - IP Management for start-ups

The workshop on IP Management for START-UP was organized by SSN-Institute Innovation Cell on 26th March 2022 from 10.30 am to 12.00 Noon in offline mode in the department of Information Technology.

The **objectives of the program** were:

- To deliver a beginner level of exposure to faculty about the journey of Start-ups

- To throw light on the procedures to convert innovative technical ideas to product and business

The resource person of the workshop was Dr. V. E. Annamalai, Principal, SSN College of Engineering.

The session has given exposure to **patent search, IP management, Ideation and how to convert Ideation to the level of Start-up**. The take-away of the workshop was the points to be given focus for initiation of a start-up and the Indian Government initiatives to bridge the gap between academia and Industry through Innovation. There were 15 faculty attendees for the workshop.

The program was coordinated by Dr. S. Chithra, Associate Professor & IIC faculty member coordinator.
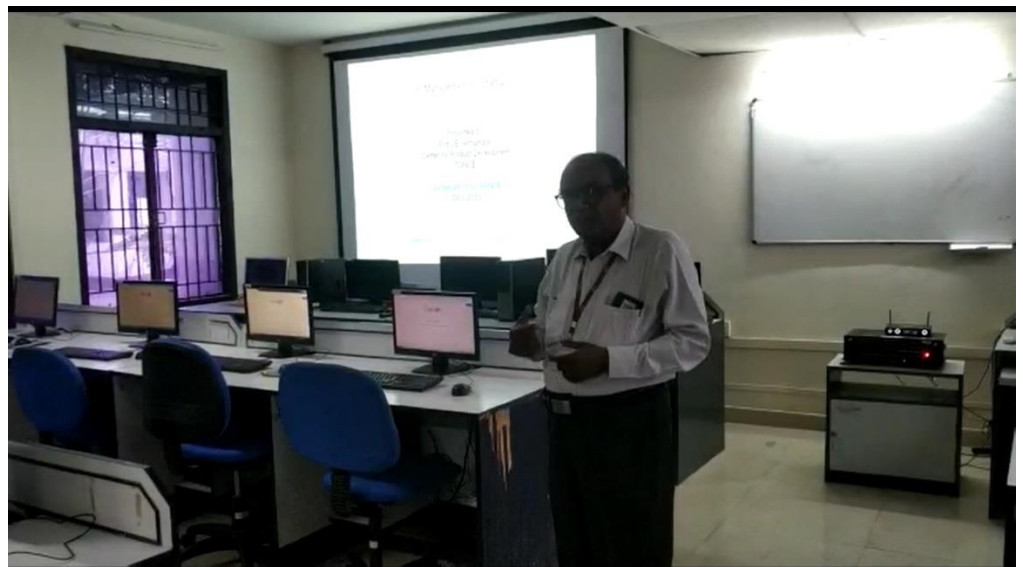
Dr. T. Sree Sharmila, ASP

Workshop on Machine Learning

Minds - Deep dive into ML

The department of IT in association with IEEE computer society student branch chapter organized **"IEEE Minds – Deep dive into ML"** on 26 June 2022. This workshop was conducted to expose its participants to the current trends in ML. Dr. Ram Prasad Krishnamoorthy, Assistant Professor of Computer Science Engineering from SNU Chennai delivered "**Recent trends in deep learning applications"** and Abhishek Pal, Senior ML engineer at Mad Street Den / blox AI delivered **"Application of ML in current services".** The motive behind developing ML and its evolution into its current heights was explained for the benefit of beginners. There was also discourse about the current research related projects that are happening on the big scale. Similarly, the current ML trends in the industry were explained. The speakers guided the participants as to how they can also get started on ML.

The event was conducted by the following student coordinators along with Dr. T. Sree Sharmila:

Aadhithya B.Kailash , Keertivaas S, Anni Priscilla A, R. Nusaiba Afsheen, Nagavel .R, Karthik Raja TP

Webinar – a writeup

Webinar on Microservices and ME(R/A)N Stack

Mr Abhishek Ganeshan who finished his B.Tech in information technology in 2010 in SSN and pursued his masters in North eastern university USA, is now a distinguished member of the workforce. He is specialized in mobile and web app development and gave us, the students of 3rd year B.Tech IT department, an amazing opportunity to broaden our horizon of knowledge by conducting a webinar on **REST API services and microservices** which contained multiple high interest topics such as **Rest API, microservices architecture, tech stack(MERN and docker) and monolithic architecture** with a very fruitful demo of TODO's microservice which gave the students an insight into the practical usage of the above discussed technologies and also a glimpse into the workflow of a professional. We, the students, thank Abhishek Ganeshan for taking the time to give us a wonderful experience and also **Dr. S. Sasirekha, Dr. T. Shanmugapriya (Associate professor IT department) and Dr. N. Radha (Assistant Professor IT department for arranging the webinar which exposed the students to learning advance and more upcoming technologies.**

Dr. I. Joe Louis Paul, ASP

FDP
Attended

Dr. S. Sasirekha, ASP

Recent Advancements in Social Internet of Things (SIoT) and Industrial Internet of Things (IIoT)

The Social Internet of Things (SIoT) and Industrial Internet of Things (IIoT) are logical extensions of the Internet of Things. The present digital age is predicted to be characterized by massive amounts of content-oriented traffic, intense interactions between billions of people who are always on the go, and diverse communications across hosts and smart things. Sensors and mobile devices, for example, detect, monitor, and gather a wide range of data regarding human social activity. The incorporation of social networking principles into the Internet of Things has resulted in the SIoT paradigm, which allows people and linked objects to interact, simplifying information exchange and enabling a number of appealing applications. This technology frontier (SIoT and IIoT) with immense engineering applications is the need for today's industry and academia.

In order to acquire a balanced perspective of the realities and needs of SIoT and IIoT, we participated in a **ATAL Five-Day Faculty Development Programme "Recent Advancements in Social Internet of Things (SIoT) and Industrial Internet of Things (IIoT)"** organized by Department of Computer Science and Engineering, National Institute of Technology Puducherry, Karaikal, Union Territory of Puducherry during February 14- 18, 2022. This FDP is a part of a massive country-wide rollout of training and learning opportunities sponsored by All India Council of Technical Education (AICTE) through its Training and Learning (ATAL) Academy.

The FDP started with introductory topics on **introduction to SIoT and IIoT**. We learned **SIoT and IIoT specific Routing Protocols and Models and Device to Device Connectivity in SIoT and IIoT** on the first day of the FDP.

In the days that followed, we gained significant knowledge and experience through the sessions on various topics such as Artificial Intelligence and Data Analytics for SIoT and Applications, Security Algorithms for SIoT and IIoT Applications, Cloud Computing for SIoT and IIoT Applications, Statistical Data and Ontology Model for SIoT and IIoT Applications, Data Mining for SIoT and IIoT Applications, Trust Management models for SIoT and IIoT Applications, Industrial Processes for IIoT, Industrial Sensing and Actuation in IIoT, SDN in IIoT and finally IIoT Case Studies. We were able to improve our knowledge and applications of SIoT and IIoT thanks to these insightful brainstorming sessions.

What was most interesting was what **Ms. Vaishnavi Y, Product Line Manager, ALE India Ltd, Bengaluru**, taught us during the FDP's concluding session on "Building Confidence with Self-Promotion" - **Speaking openly about our own accomplishments will help others understand our strengths and skills, which in turn will boost our confidence and persuasion skills**.

Dr. I. Joe Louis Paul
Dr. S. Sasirekha

Invente 6.0

INVENTE, the annual technical fest of SSN Institutions is an event which etched its name in the walls of the most familiar and awaited college festivals. The 6th Edition of INVENTE, albeit online, is no different from the editions of the past and aims to showcase the technological prowess of students across the country. The Department of Information Technology focuses on a wide range of areas ranging from **Data Structures and Algorithms to Artificial Intelligence and Machine Learning**. We had around **400 participants** from a variety of colleges around India. In INVENTE 6.0 IT Department had 8 events which included 6 technical events **(Enigma, Websitica, Codera, Analytics Sprint, Reverse Gear and Papyrus)** and 2 non-technical events **(Sports Quiz and E-Treasure Hunt).**

We were able to run every event smoothly with the help of our valuable sponsors. We were grateful to **Yoode Promotions LTD., Mr. Cooper and ISACA.** The Department of Information Technology gave prize money to winners and runners of all the events around Rs. 30,000/-. We selected our winners and runners based on their performances on several rounds of the particular events. Some of the events consisted of MCQ round and Coding round, some had two levels of coding round.

The winners and runners of CODERA and WEBSITICA has been offered with internship opportunities from Mr. Cooper India along with the cash prizes and certificates.

Invente 6.0

Instincts'22

Instincts '22

This year, Instincts happened with a big bash on the 13th and 14th of May, 2022. This time, it was held offline, much to the student's pleasure compared to the last edition of the event which occurred online. The true spirit of our beloved college's cultural fest had been reached. All clubs showed their enthusiasm to ensure Instincts retained its reverence. Annual fundraisers such as SSN Music Club's SMC Live, No Refund from Humour Us and a comedy drama from Light's out please occurred in the preceding week. Student turnout for these events were mind blowing.

The day long cultural fest commenced on the 13th of May, with all the college's clubs coming together to conduct grand events. The clubs in SSN boast flagship events which attracts participation from all over the country. The club members and the organizing committee put their maximal effort, which resulted in a huge number of registrations from various parts of the country. Esteemed artists in the fields of music, dance, literature, and cinema were brought in as judges.

The cultural fest was publicized and conducted smoothly and with great flair. Apart from the 9 clubs which had their own events – Lights Out Please (Theatre Club), English Literary Club, SSN Film Club, Saaral Tamizh Mandram, SSN Photography Club, Arudhra (Classical Dance Club), N2K (Western Dance Club), SSN Music Club, Q! (Quiz Club) and Gradient (SSN Design Club), the PR team was a major factor in the reach the fest could achieve with the marketing they had done in all public platforms.

Instincts'22

Special events such as **ProShow (Music Performance by Masaa Coffee Band), Fire Silambam, Thaarai Thappattai, Bike Show and DJ night** were also conducted during the evenings. Overall, the participants were given a period of fun and enthusiasm, away from the routine of academics and timetables

Insights into Placement Activity

With every passing year, the IT department has set high milestones in placements during 2021-2022

MARQUEE

- **PayPal**
- **Avalara**
- **Google**
- **ITK Education Services Pvt. Ltd**
- **Amazon**
- **Workato**
- **ChargeBee**

SUPER DREAM

- **Fidelity**
- **Citibank**
- **Gain Credit**
- **Ola Electric Mobility**
- **Optum**
- **CommScope**
- **Mr.Cooper**
- **Nielsen**
- **Toyota Connected**
- **Cred Avenue**
- **Samsung R&D**
- **Lynk Logistics**
- **Sapient**
- **NAVIS**
- **Accolite Software**
- **Barclays**
- **Tiger Analytics**
- **FIS Global**

Average Salary based on Effective placement is 12.01 lakhs

Effective Placement

Total no.of Reg. Students	No.of.Stduents placed	% of Placement
129	119	92.3

Stats on received offers

Single offer	Dual offer	Triple offer	Four or more offer
55	49	12	3

CATEGORYWISE JOB OFFERS

■ Marquee ■ Super dream ■ Dream ■ Core ■ Regular ■ Others

- 34%
- 30%
- 27%
- 7%
- 1%
- 1%
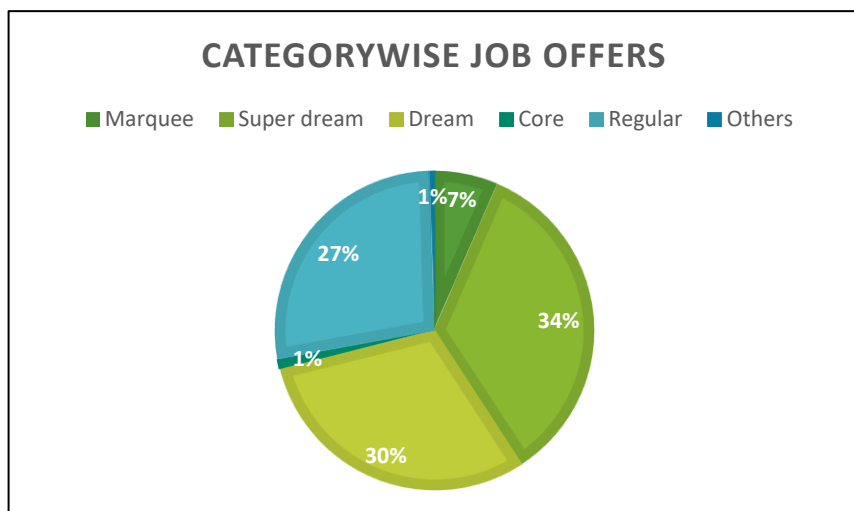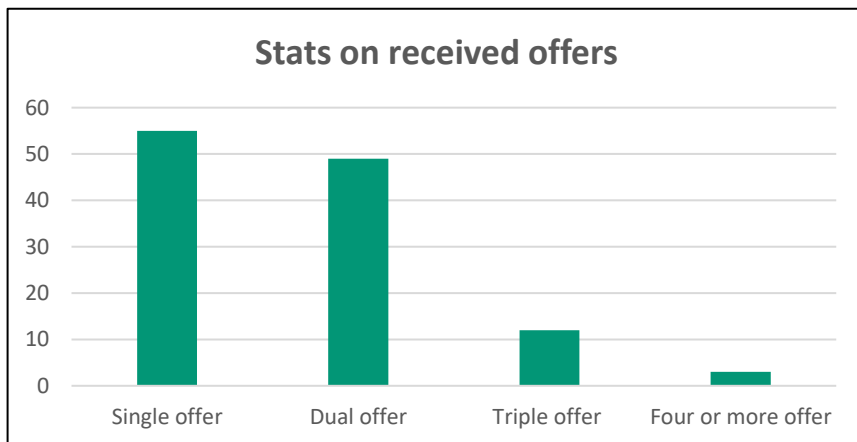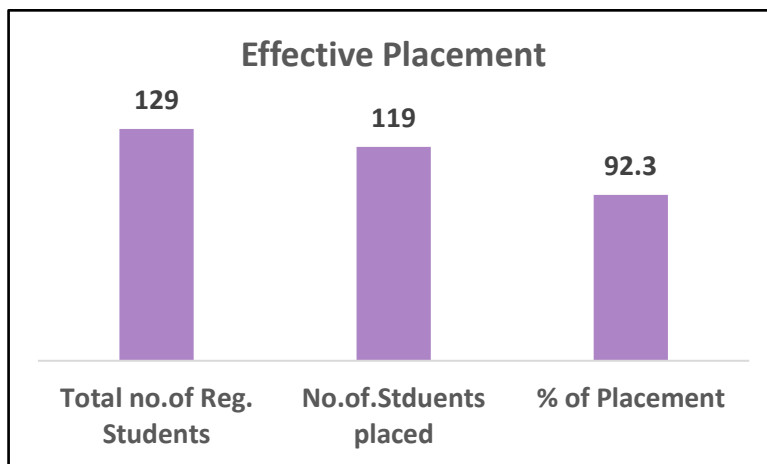
Internship 2021 – 2022

In collaboration with

IBM India Private Limited
Mr.Cooper
Motorq
Navis
Amazon
Verizon
Ernst & Young LLP
PayPal
Samsung R&D
Siemens
Citibank
Goldman Sachs

Stats and Trends of internship

Stipend in the range of 10K to 2L

MODE OF INTERNSHIP

■ Virtual   ■ Physical   ■ Hybrid

25%

4%

71%
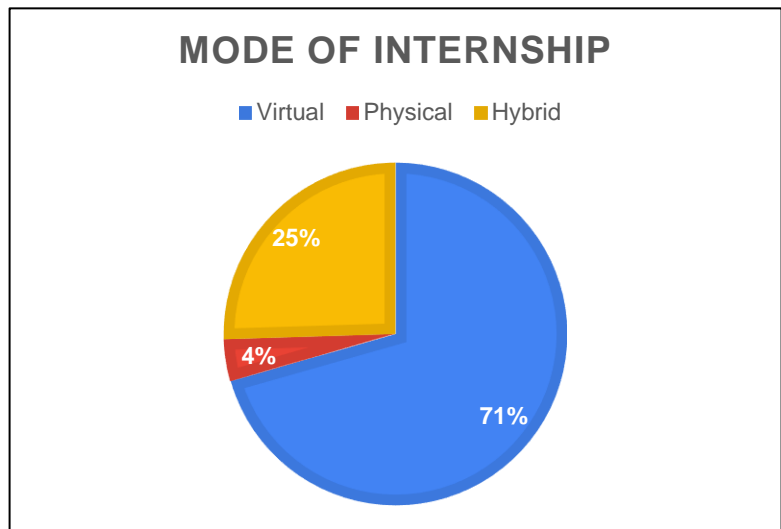
Internship Roles offered

Software Development Engineer Intern

Web Development Intern

Mobile Developer Intern

Full Stack Engineer

Data Engineer Intern

Analyst - Technology Consulting

Data Analyst intern

Business system analyst - Product

Business System Analyst - Sales

R&D Engineer Intern

Student

Accolade –

Courses

Completed

NPTEL Courses

#Students successfully completed courses: 56

II Year: 19
III Year: 37

Marks Secured

>= 90 — 27%
>= 80 — 52%
>= 70 — 21%

Legend: ■ >= 90   ■ >= 80   ■ >= 70
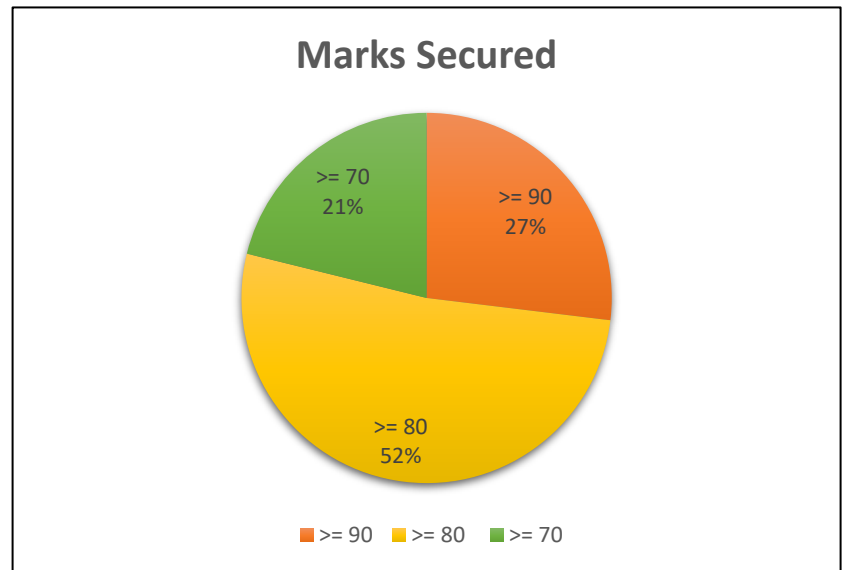
Value added courses

Intelligent Mobility: Applied Computer Vision and Deep Learning

- Number of Student completed – 56
- Course instructor – Dr Vijay John, Research scientist at RIKEN Institute Japan

Project based Study on Intelligent Mobility

- Number of Students completed – 10
- Course instructor – Dr Vijay John, Research scientist at RIKEN Institute Japan

Containerize Full stack application

- Course instructor – Dr S.K. Praveen, Senior Software Developer, PayPal, Singapore

Student Accolade – Certificate of Excellence

- The team, "Birds of feather " formed by Dr P. Vasuki, ASP and Koushik R, Swapna T, III Year IT students, Rohith of III year ECE participated in a ML Competition BirdCLEF 2022 and secured 33 place out of 749 submission
- Arun N, 195002013 of 3rd Year, B.Tech IT, has secured 31'st rank in Codentine 3.0 - A National Level Online Coding Challenge organized by ACM, Manipal.

- Harrison Vijay J and Keertivas S, Final Year, B.Tech, conducted the technical club activity "ProCoDe in Physical" at IT seminar hall on 26.03.2022.
- Adithya Sriram R of III year IT won the runners-up position in the Swyng Dunlop Bengaluru Open in the Men's Open category, held on 19th and 20th of February 2022. He was awarded a Dunlop kitbag, Dunlop accessories and a trophy.
- Supriya Abirami A & Deepika II year students won first place and 3000 cash award in SSN Maths Quiz in eXLog 2022 conducted by SSN Math Club on 25.03.2022
- Ritheesh Kumar and Sushmitha secured runner's up position in Exlog – Matheletes competition held by SSN Math Club on 25.03.2022
- S Rohith of II year received the Ist prize in fiction category of the creative writing competition organized by English Dept, SSNCE
- Shalom Filbert David of II year received 2'nd price in non- fiction category of the creative writing competition organized by English Dept, SSNCE
- Shriram MS of II year won the Man of the match in 2nd round in (quarter-finals) of LICET tournament
- Shahana HSJ, III year, B. Tech, along with her team won the first place in 120b band event in HDJ-BITs mesra,
- Shahana HSJ, III year, B. Tech, along with her team secured 5'th place in national level Music competition, "Strawberry Fields - NLSIU, Bangalore"
- Shahana HSJ, III year, B. Tech, along with her team got second place in the competitions held in IITDM Samgatha
- Nalin, II Year, B.Tech, has got 4'th place in All India Institute Tournament

Student Accolade – Certificate of Excellence

for Gun Shooting.

- Nalin, II Year, B.Tech, has got 5'th place in gun shooting in Khelo India program at Karnataka
- Shahana HSJ, III year, B. Tech, along with her team secured 3'rd place in the competition held at IIIT Kotayam.
- Sahana HSJ of III year IT student with her team SMC's 120dB won first prize in Anna University's Techofes's Battel of the Bands. 12.5.2022
- Sahana HSJ of III year IT student with her team SMC's 120dB won first prize in HIGHWAYS Rising-Battle of the Bands at Sri Venkateshwara College of Engineering on 5.5.2022
- Sahana HSJ of III year IT student - second place in Vocal Solo Competition at HIGHWAYS i Venkateshwara College of Engineering on 5.5.2022
- Shriram M S (2020-2024 Batch) was selected for University zonal team and played the south zone inter-univ tournament.
- Adharsh Gurudev of second year played Cricket League match as part of Purasawalkkam team.
- In SSN Annual Sports event, the following achievements have been made by B.Tech IT students:
  - Prithvikiran P (2020-2024 Batch) has got 1st place in 1500 m
  - S V Pritish(2020-2024 Batch) has got Silver Medal in Badminton
  - Anush Rajagopalan(2020-2024 Batch) runner up in Cricket

Internally Funded Projects

Faculty IFP:

Name of PI & Co-PI: Dr. K. S. Gayathri Dr. R. Vinob Chander

Project Title: Ambient assisted dementia care through smart home with activity recognition, abnormality detection and decision support system using artificial intelligence and machine learning technique

Duration: 3 Years

Funded Amount: 2 Lakhs

Approved Students IFP titles:

- Human emotion recognition
- Cymatics analysis of basic sounds of Tamil and Sanskrit
- Virtualized tongue drum
- Brain speech recognition
- Image understanding and caption generation for visually impaired
- Classification of groundnut seeds
- Digital monitor for hostel on unauthorized entry
- Impact of various musical instruments on brain using machine learning
- An IoT based baby monitoring and smart cradle system
- Face mask detection with audio alert
- Parkinson's disease diagnosis through image processing
- Mental wellness prediction of online learners
- Connected domination integrity in graphs
- 3D visualizer for realistic classroom demonstration using augmented reality
- Smart access to academic research laboratory by object recognition models in internet things
- Facial recognition system and spoofing detection with voice controlled automatic door opening for visually impaired people with Alexa
- Periodontal disease prediction - a deep learning approach
- A.V.I (Assistant for Visually Impaired)
- Contactless smart attendance system
- Web scrapping and web app development implementing real-time stock checker

Faculty Corner – External Recognitions

- Dr. S. Chithra, ASP, has delivered a talk titled Data Analytics using IoT Devices in Healthcare for DST sponsored six days FDP on Data Analytics in Healthcare on 19.1.22, organized by the Department of CSE, SSN College of Engineering.
- Dr. T. Sree Sharmila, ASP, acted as a session chair in International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI-2022) conducted by St. Joseph's College of Engineering, Chennai on 29.01.2022.
- Dr. K.S.Gayathri, AP, acted as a resource person and delivered a technical talk in the Induction Programme on 11/01/2022 at St.Peter's institute of higher education and research, Avadi, Chennai.
- Dr. S. Sasirekha, ASP, has acted as an Examiner for the PhD comprehensive examination for the candidate Mr. S.Mr.Gunasekar on 12.01.2020, SRM Institute of Science and Technology, Katankulathur.
- Dr. V. ArulKumar, AP, delivered talk on Effective scheduling and performance measuring of data center in cloud at SRM Institute of science and Technology-Ramapuram on 03.02.2022.
- Dr. N. Bhalaji, ASP, delivered a talk on Blockchain Essentials at Department of ECE, SRMIST on 17.03.22
- Dr. N. Bhalaji, ASP, delivered a talk on "Cyber awareness" during the FDP conducted by School of Engineering, Presidency University, Bangalore on 14.03.22.
- Dr. N. Bhalaji, ASP, delivered a talk on "STAND UP for START UP - A Beginner level Exposure" on 22.03.22 conducted by SSN Institution's Innovation Council
- Dr. T. Sree Sharmila, ASP, acted as a session chair in the International Conference on "Smart Technologies and Systems for Next Generation Computing" at IFET College of Engineering, 25.03.2022.
- Dr. K.S.Gayathri, AP, acted as a resource person and delivered a technical talk in Faculty Development Programme on Advancements in Computational Technologies at Dr.M.G.R Educational and Research Institute University, Chennai - 600 095 on 31 March 2022.
- Dr. S. Karthika, ASP, acted as a resource person and delivered a lecture on Discriminant Analysis in STTP on Machine Learning Algorithms for Data Science organized by IIC of SRM Institute of Science and Technology on 24-03-2022.
- Dr. S. Sasirekha, ASP, acted as a resource person in Workshop on IoT and Industry Transformation held on 5th March 2022 at M.O.P Vaishnav College for Women (Autonomous), Chennai.
- Dr. C. Aravindan, Professor and HoD acted as Board of Studies member in Computer Science and Engineering for the revision of the curriculum for B. Tech and M. Tech Programs on 26-03-2022 at Vel Tech Rangarajan Dr. Sagunthala R & D Institute of Science and Technology, Avadi, Chennai.
- Dr. C. Aravindan, Professor and HoD acted as DC member for the scholar of Dr. G. Sumathi, Professor, Department of Information Technology, Sri Venkateswara College of Engineering on 06-04-2022.

Faculty Corner – External Recognitions

- Dr. C. Aravindan, Professor and HoD acted as DC member for the scholar of Dr. Chithradevi. D, Assistant Professor, Hindustan Institute of Technology and Science, Chennai, on 19-04-2022.
- Dr. C. Aravindan, Professor and HoD acted as RAC member for the scholar of Dr. V. Srinivasa Rao, Professor & Head, Department of Computer Science & Engineering, Dean, School of Computing, Vel Tech Rangarajan Dr.Sagunthala, R&D Institute of Science and Technology, Avadi, Chennai on 27-04-2022.
- Dr. K. S. Gayathri, AP, acted as a resource person and delivered a technical talk on "Recommender Systems" in a Faculty Development Programme on Artificial Intelligence and its applications at J.N.N Institute of Engineering, Chennai, 25th to 30th April 2022.
- Dr. N. Bhalaji, ASP, delivered a talk on "Internet of Things and its applications" at the Department of CSE, St. Josephs institute of technology on 04.04.22.
- Dr. N. Sripriya, ASP, delivered a guest lecture on "Applications of Data Structures in Real World" in a Webinar organized by the Department of Computer Science & Engineering of Vels Institute of Science, Technology and Advanced Studies in association with Computer Society of India on 13.05.2022.
- Dr. P. Vasuki, ASP, acted as a resource person on May 19'th and delivered the talk- "Emotion Recognition" in the online Faculty Development Programme in "Recent trends in Signal and Image Processing" sponsored by TEQIP-II in association with the Department of ECE, Government Engineering College, Palakkad from 16th to 20th of May - 2022.
- Dr. P. Vasuki, ASP, acted as a resource person on May 25'th and delivered the talk- "Emotion Recognition" in the online Faculty Development Programme in "Advanced Engineering Application Development ", VIT, Andhra Pradesh on 24'th & 25th of May - 2022.
- Dr. S. Chithra, ASP, acted as a resource person and delivered a talk on "IoT in smart cities on 27.5.22 in Online 6-Days FDP on Emerging Technology Trends in Disaster Management with Applications" organized by SRM IST, Chennai from 23.5.22 – 28.5.22.
- Dr. P. Vasuki, ASP, has been invited as a member of Technical Programme Committee for IEEE sponsored International Conference on Intelligent Systems for Communication, IoT and Security [ISCIS 2023] to be held from February 9 – 11, 2023 at PGG College of Technology
- Dr. T. Sree Sharmila, ASP, attended an online DC meeting for the candidate Ms. V. Anuraghavi, VIT, Chennai Campus on 25.05.2022.
- Dr. E. M. Malathy, ASP, presented a guest lecture on "Next Generation Computing" at St. Joseph Institute of Technology on 9.5.2022.
- Dr .N. Bhalaji, ASP, delivered a guest lecture on "Blockchain Technology" at S.A.Engineering College on 10.05.22
- Dr .N. Bhalaji, ASP, was invited to act as an external subject matter expert for the PhD viva-voce examination held at SRM Institute of technology, kattankaluthur, on 11.05.22
- Dr .N. Bhalaji, ASP, attended a DC Meeting for part-time scholars at Vels institute of Science and Advance studies, Chennai on 19.05.22

Faculty Corner – External Recognitions

- Dr. N. Bhalaji, ASP, attended an online Doctoral committee meeting for the full-time scholar of Dr. A.Karmel, ASP, VIT online on 20.05.22
- Dr. N. Bhalaji, ASP, attended a DC Meeting for part-time scholars of SRM Institute of Science and Technology, Chennai on 24.05.22
- Dr. N. Bhalaji, ASP, delivered a guest lecture on the topic of "Blockchain technology for Electrical Engineering" during the two days workshop conducted by the IEI Student chapter of Sri Venkateswara College of Engineering on 30.05.22.
- Dr. A. Shahina, Professor, acted as Technical Program Committee (TPC) member in the Interspeech 2022 conference, Incheon, S. Korea
- Dr. A. Shahina, Professor, acted as Technical Program Committee (TPC) Technical Program Committee (TPC)member in the IEEE International Conference on Signal Processing and Communications (SPCOM 2022), Indian Institute of Science (IISc).
- Dr. C. Aravindan, Prof & HoD, was invited for Syllabus Sub Committee meeting to revise the Curriculum (III-VIII) of B.Tech. Artificial Intelligence and Data Science, B.Tech. Computer Science and Business Systems and B.E. Computer Science and Design under Regulations (R-2021) for the Non-Autonomous Colleges Affiliated to Anna University under Faculty of Information and Communication Engineering on 6th June 2022.
- Dr. C. Aravindan, Prof & HoD, was invited for Second Syllabus Sub Committee meeting for framing the syllabus of B.Tech. Artificial Intelligence and Data Science, B.Tech. Computer Science and Business Systems and B.E. Computer Science and Design under Regulations (R-2021) for the Non-Autonomous Colleges Affiliated to Anna University on 28th June 2022.
- Dr. S. Sasirekha, ASP, acted as External expert for the scrutinizing process of the autonomous end semester question paper held on 22/6/2022 in the Department of Information Technology, Sri Venkateswara College of Engineering, Sriperumbudur.
- Dr. S. Sasirekha, ASP, participated as a mentor in IEEE Women in Engineering Project-Based Learning School Camp 3.0 (Learn - Collaborate – Innovate) during Jun 18-25. The Team 11(Druvi Sahay, VIII Kendriya Vidyalaya No. 2 Nausenabaugh, Gandhigram Post, Visakhapatnam &; Ben K Seby, X Chavara Public School, Pala, Kerala) under her mentorship has won the 1st Runner up Prize.
- Dr. I. Joe Louis Paul, ASP, delivered an Inaugural Keynote Address on "Living and Computing on the Edge – An Overview of Federated Learning" in the National Conference on Communication, Networking and Intelligence (NCCNI'22) Organized by the Department of Electronics and Communication Engineering, Kings College of Engineering, Thanjavur, on 10.06.2022.
- Dr. I. Joe Louis Paul, ASP, attended an Online DC meeting as the External DC Member for the Part-Time Research Scholar Mr. Ravi Kishore Veluri, School of Computer Science and Engineering, VIT, Chennai Campus on 29.06.2022.

Faculty

Corner –

External

Recognitions

- Dr. C. Aravindan, Prof & HoD, was invited as RAC member for the scholar of Dr. V. Srinivas Rao, Professor & Head, Department of Computer Science & Engineering Dean, School of Computing, Vel Tech Rangarajan Dr.Sagunthala, R&D Institute of Science and Technology (Deemed to be University) on 11th June 2022.

Industry Collaboration and MOU

- Dr. C. Aravindan, Professor and HoD along with faculty members of IT department had a project discussion with FORD Motors team on 04-02-2022.
- An MoU has been signed between SSN College of Engineering and Boston IT Solutions (India) Pvt. Ltd, Bangalore on 12-01-2022, initiated by Dr. C. Aravindan, Professor & HoD, Department of IT.
- Dr. S. Chithra, ASP, delivered a session on "IoT and Bigdata", in the workshop on Industry 4.0 Eco System organized by SSN College of Engineering and Future Connect on 21.01.2022.
- Dr. T. Sree Sharmila, ASP, delivered a talk titled Image and Video Processing in the workshop on Industry 4.0 Eco System organized by SSN College of Engineering and Future Connect on 22.01.2022.

Solving Crimes using Graph Theory

The Investigation

We have 3 suspects for a jewellery theft. They are brought into inquiry and their claims are as follows:
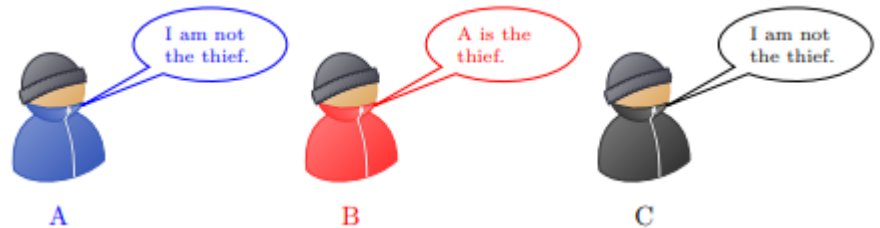
We are also provided with the information that:

- There is only one thief

- Only one of them is telling the truth.

One of the following possibilities exist:

- If A were the thief, then the claims made by both B and C are true. But we want a situation where only 1 person is telling the truth. Thus, A cannot be the thief.

- If B were the thief, then the claims of C and A are again both true! Thus, B cannot be the thief.

- But if C were the thief, then B's accusation is wrong. And only A's claims holds true logically. Thus C is the thief.

This kind of logical analysis is complete, but not efficient. What if there are more suspects? What if 2 or more people are telling the truth? It would be a complete mess to wade through these statements to fetch our results. Fortunately, this is where graphs (not the kind with grids!) come to the rescue!

The Transformation

A graph is just a structure you make with circles (technically, "nodes") and lines ("edges") to model a real-world scenario. To model our scenario, let's first set up a table.

Thief \ Validity	A	B	C
A		✓	✓
B	✓		✓
C	✓		

The first row is labelled A. This means that we are considering the scenario where A is the thief, in which case, the claims of B and C are logically true. Thus, we mark a tick against the columns labelled B and C. This process is

repeated for other scenarios as well. (We are just representing our previous descriptive logic in a tabular format)

Next, we construct the graph using the table –

- Nodes – The nodes of this graph are the labels of the rows and the columns (there is only one node for a given label).

- Edges - For each cell (X, Y)*, if a tick mark is present in this cell: make an edge directed from node Y to node X.

* the cell in the row labelled X and column labelled Y
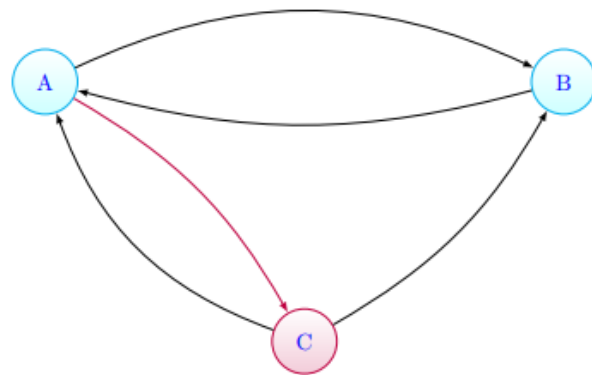
The Analysis

- Basically, (for this problem), we are looking for the scenario where only one person is telling the truth. In our case, it happens to be the 3rd row (labelled C).+

- Let's look for the same in our graph – there is only 1 tick for the row labelled C. This means that there will be only one edge directed (pointing) to C. Thus, if only one person is telling the truth, we look for that node in the graph that has only 1 edge pointing to it.

- This can be generalized – if x persons are telling the truth, then we look for that node which has x edges directed towards it. (There can be multiple

- nodes that have x edges directed towards them! In that case, we need further information to catch our thief.)

- The number of edges pointing to a node is called the in-degree of that node. Thus, the entire problem of catching the thief reduces down to finding the in-degree of every node!

+If you can get the result from the table itself, why require a graph in the first place? The table is basically a representation of the graph. Graphs are easier to visualize and help to gain better intuition of the solution being proposed.

Some Observations

- Note that this method can also be used in scenarios where the number of thieves are more than one. This only requires a small change in the way we label the rows.

- But more importantly, this technique is only as useful as the information provided to us. If all thieves say "I did not steal", then this technique is not all that useful!

A Note for Prospective Data Scientists

Below are some of the most useful graph-based algorithms -

- Dijkstra's Algorithm - used to find the shortest path from a given source to a destination. Variations of this algorithm are extensively used in Google Maps to find the shortest routes.

- Connected Components - used to cluster related data into groups. For example, customer IDs of an E-Commerce website that use the same credit-card number or fall under a particular location can constitute a connected component. In this way, we obtain various components and recommendations can be tailored for each such group.

- Minimum Spanning Tree - used popularly for problems such as connecting different cities with minimum amount of PVC pipes for supplying water.

- PageRank - used by Google Search to assign scores to a page based on the number and quality of links to that page.

A Final Note on Visualization

- As one might have guessed from the style of the images, the tool used in this article for drawing images is LaTeX. LaTeX is a software system used mainly for writing theses. However, its scope has now widened to a much greater extent (to include packages like Tikz for creating graphic elements) making it a very powerful and flexible tool.

- The Python library, NetworkX also provides basic functionality for visualizing graphs, but its main goal is to enable graph analysis rather than perform graph visualization.

Surround and Atmos

If you've gone to the cinema-theatre for at least 3 or 4 festive releases over the last few years, you would've noticed the words "Dolby Atmos 7.xyz" or "dts:X Surround Sound magic xoxo' and whatnot. Ever wondered what that was? Why would movie-theatres bother to make sure we see seemingly random phrases and numbers before we get to watch a movie? A lot to unpack here. So traditionally, sound systems were systems consisting of one main receiver, which decodes the audio input stream and gives them out as discrete audio tracks for different speakers, which would correspond to the actio being depicted in the on-screen visual.

So, when you see the number 5.x or 7.y, the numbers before the period represent the number of distinct audio channels or regular speakers. Each of these channels can receive a separate audio signal. So in 5.x surround, generally the centre speakers play dialogue whereas the other speakers play audio corresponding to on screen visuals, for an overall immersive experience. By contrast, a 2.0 surround system means a plain old, straightforward stereo setup with a Left and a Right input channel only.
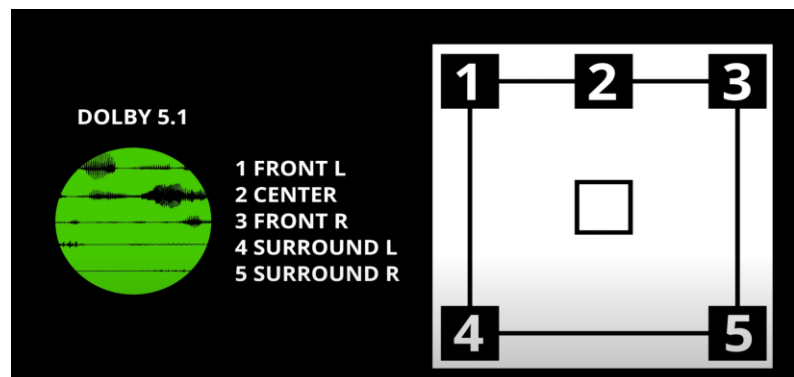
The second number on the 5.1 system indicates the number of low-frequency effects (LFE) channels which are reproduced on subwoofers. Typical speakers are not usually equipped enough to reproduce low-frequency sounds The subwoofer reproduces only sub-bass sounds, so its broken out as a separate 0.1 to indicate its not a normal speaker. Sometimes you can see .2 systems which have capability to support an additional subwoofer for more spatial accuracy.

Students

Articles

V. Meganathan
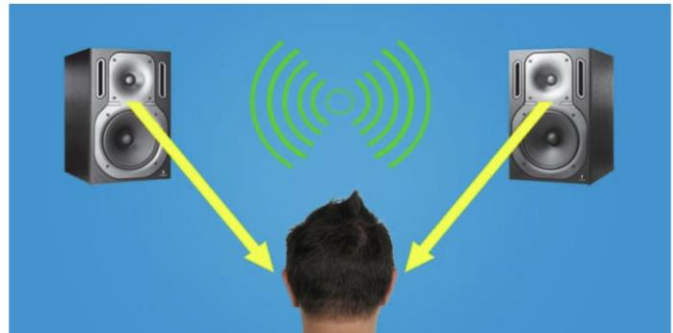
Surround Sound

There is a newer standard which adds a 3rd number to the speaker system, like 9.2.4. The third number indicates the number of over-head or height channels which are used in ceiling mounted speakers. For systems that support object-based surround protocol like Dolby Atmos or dts X. Here sounds are recorded as individual objects mapped out on a 3d Space, instead of splitting them into channels. This means that instead of each audio track corresponding to one channel, the tracks are encoded with data that indicate some location in space. So previously in the 5.x systems, when a helicopter flies over you in a scene, you can sense the audio coming first coming from the front speakers, then as the aircraft moves, the back speakers start to fire.

But whereas in surround sound, the helicopter is treated as an object, and it is encoded as a spot in space above you, that moves around in real time. This gives a much more immersive experience. The best part about surround sound systems is that they scale amazingly. They can work with upto 128 separate object speakers and can also perform well in 2 speaker set ups. They are able to do this because it is just software encoding that matters, so even a simple earphone will be able to simulate a surround sound experience. You can experience this for yourself in the Dolby Atmos official website.
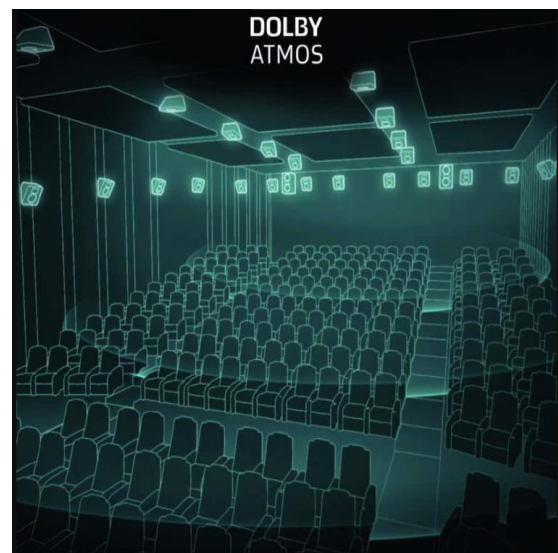
Building TickEth.io

Founding team: Yuvan Arvind, Sayeeshwar K, Vedh Vijay, Varun S

TickEth is a seamless NFT ticketing platform that adds more value to tickets than ever for the same cost. We are trying to revolutionize the ticketing industry by tokenising all the tickets. TED talks, concerts, stand-up shows, live sports events and many other large events use physical or digital tickets to distribute to the audience. The major problem here is with the authenticity and transparency as many scalpers make profits from selling these tickets at a higher price when they haven't contributed in any way to the event.

We started off as 3 curious crypto investors back in early 2021, during the bull run. As time progressed we became fascinated by blockchain technology and embarked on this journey of building something in this space. We believe this could be a disruptive technology and change the digital world as we know it. After multiple brainstorming sessions and failed ideas, we identified a valid use-case in the ticketing industry.

IR

Our vision is to revolutionize the ticketing industry by enhancing event experiences. Preventing scalping will culminate in the ticketing industry being transparent and authentic which is a massive jump from the current industry standards. Tickets will go from being just a mode of entry to a collectible that has value, even after the completion of the event. We aim to set the industry standards for ticketing.

TickEth was one of the top 8 start-ups(acceptance rate of 0.3%.) to get selected into the Antler India Fellowship Program, a 16-week accelerator program specifically tailored for s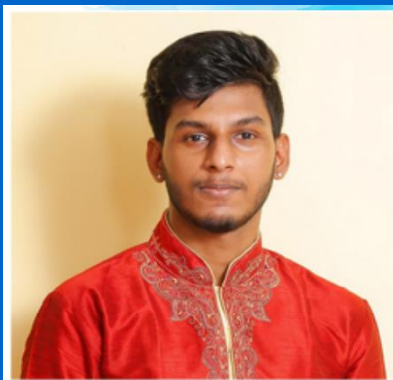tudent entrepreneurs. Antler is a Singapore based VC firm that identifies start-ups at a very early stage to support their growth. We are also the official ticketing partners for the Web3 conference India 2022, being held in Goa. Over 800 tickets have been listed for the event which spans over August 12, 13 and 14. Tickets worth over $25,000 has been minted till date and we're growing rapidly. We aim to partner up with more such events and provide a unique event experience to everyone attending it.

It's been a great journey building TickEth from just an idea on a piece of paper to a Beta staged product with a young team of just 6 people. The learning curve for all of us has been immense these past few months and we hope to keep growing from these learnings and coming out of it as levelled up individuals.

Yuvan Arvind
Final Year

MEASURING LIFE - EXPERIMENTS AND EXPERIENCES

One of the alum events was held in April '22 with Mr Aashik Joel. With his firm MyCTO.live, he is an entrepreneur and designer that integrates the confluence of design and tech in producing and marketing a product. I served as the event's moderator; I sincerely thank the Alumni Co-ordinators Dr P. Vasuki and Dr S.Sasirekha for organizing this event. Also, I Thank Dr N Sripriya for facilitating alumni with the momenteo.

Aashik began this interactive session, "Measuring Life - Experiments and Experiences," by sharing his experiences from college and after regarding how to choose and alter a career outside of technology and how doing so can help one succeed in it. After that, Aashik organized a fun activity in which the students were divided into three-person teams. The students were required to construct a tower with a set of newspapers, glue, tape, scissors, and instructions. The team with the tallest tower won. According to Aashik, the theme of this exercise was "Making something out of Nothing." The students had fifteen minutes to finish the activity. In conclusion, several teams constructed their "Paper Towers" using various extraordinary solutions. The adage "stronger the base, taller the tower" stresses the need for one to be firm with the fundamentals of something to advance farther in that field. The goal was to encourage teamwork, an openness to trying new things, and unconventional thinking.

Finally, using a paper as an example and creating new things with each fold, Aashik delivered a motivational speech was made on "How adapting to new changes can aid you in enhancing your profession." This interactive session was informative, motivating, and a fantastic experience for the students.

Jai Kishore, President of Student AIT

Students

Articles

Journey Towards IEEE Richard Merwin Scholarship

I am a recipient of the IEEE Richard E. Merwin scholarship for Fall 2021. It consists of a $1000 USD cash grant, a Certificate of Commendation, and an opportunity to act as IEEE Computer Society Regional Student Ambassador. This scholarship was awarded in recognition of my exemplary involvement in student chapter activities, excellent academic achievements, and extracurricular activities. IEEE Computer Society offers student scholarships to recognize and reward active student volunteer leaders in IEEE Student Branches who show promise in their academic and professional efforts. The evaluation criteria includes participation in student IEEE branch/chapter activities (30%), academic achievement (30%), extracurricular activities (10%), letter of recommendation (20%), and quality of Student Ambassador vision statement (10%). This scholarship is awarded only to a maximum of 18 students across the globe per cycle. I have been an active member in IEEE for 4 years. I was the chair of the SSN IEEE Computer Society chapter during the 2021-22 academic year.

Dr. Sree Sharmila is the IEEE Student Branch counsellor for SSN. Under her guidance, I have organised and volunteered for various IEEE events such as Hack&Tackle, placement talks, coding contests, paper presentations and technical workshops among many others. On the academic side, I am a merit scholarship awardee in SSN and have scored top ranks in IEEE Xtreme programming contests. Our department professors helped me with the LORs to support my overall profile, skills & talents. The entire process of preparing and applying for this scholarship was exciting. I was able to evaluate myself better in all areas. Being the first student from SSN to win this scholarship, I feel extremely proud to bring recognition for the SSN IEEE branch at a global level. I also got the opportunity to interact with Dr. Kala Vijayakumar, President - SSN Institutions and Dr. V.E. Annamalai, Principal which gave me immense pleasure. I would like to extend my gratitude to the President, Principal, HOD, all the professors, college management and IEEE volunteers.

Aadhithya B.Kailash
(2018-22 batch)

Students

Articles

Google Women Engineers Program

Myself Sreeshma Nair, along with Merudhula S (1st year, IT – A) and Charumathi P (1st year, CSE-A) have been selected in the top 250 first-year women engineers in India for the Google Women Engineers Program (Cohort – 4) among 40,000+ applicants offered by Talent Sprint. We have been awarded a 100% fee scholarship covering the complete program fee and a cash scholarship of ₹1 lakh. It is a 2-year professional development program designed by Talent Sprint and supported by Google consisting of coding boot camps, team-based projects, certifications, live online sessions for technical and corporate skills by academic experts and corporate leaders, and mentoring sessions from google professionals.

The selection process had 4 stages: Aptitude Test, English Proficiency Test, Coding Round, and Interview Round and all first-year women engineers pursuing IT/CSE/EEE/ECE specialisation are eligible for the program. It is not compulsory to have prior coding knowledge while applying. The WE Program team organized several masterclasses and practice sessions for applicants to learn programming and several mock tests, doubt clearing sessions and resources were provided for preparation.

The 3-hour coding round had a set of coding challenges and multiple- choice questions. The test could be given in our preferred language (Java, C++, Python, etc.). All questions were at easy-to-medium level for beginner programmers and similar to the questions in the mock test. The interview round was mostly a 20-minute discussion about our skills and tech-related and extra-curricular activities participation, our goals and aspirations, expectations from the program, how we would manage time alongside college if selected. The interviewer also tested problem-solving ability by posing questions and we were expected to explain out approach for solving them.

WE program enables participants to gain exposure to professional tools, processes, and approaches to compete and excel in the global tech world. Through the program, we are now also a part of the Google Women Techmakers community. I am excited to kickstart this journey and hope to make the best of this opportunity.

Sreeshma M Nair
First-year

MITACS Globalink Research Internship

Students

Articles

How I knew about MITACS?
I heard about MITACS from a friend and applied in the month of September 2021. Had my interviews in November and got my selection by the start of December.

What's MITACS briefly?
It offered a fully funded (a stipend, air travel, health insurance, accommodation expenses, extra money) on-field research internship in a few selected Canadian public universities for 3 months in your field and domain of choice and interest based on a series of interviews and procedures.

What I'm working on and my experience so far?
I'm a Virtual Reality Software developer, love designing and am a huge history nerd. Given none of these combined or individually have encouragement or seldom any attractive projects or work prospects here, the Canadian government through mitacs gave me an amazing opportunity to work on all these together with a multi-national and cultural team under well renowned professors in high end facilitated labs. It not only provides multidisciplinary work environment projects but a cultural and psychological learning experience through the differences and new perspectives by interacting with all the teammates. For instance, the project I work on is the "Virtualization of Historic and Heritage Sites of the Colonial and Indigenous peoples of Canada for their Preservation". So I get to work with VR developers, Game Engineers, Architects, Historians Civil engineers and Government employees who are all racially, geographically and linguistically very different, and I'm expected to learn all their workflow and related softwares apart from my IT requirements. It's so much fun and makes one feel so much better as a human given the work culture, personal satisfaction. team dynamics and entertainment, and not to mention the Canadian Summer and Fall.

What's REALLY working through MITACS?
This is open to all undergraduates 1st year and above, to all fields and interests spread throughout all Canadian provinces. One can work with Web Development with Chemistry at Ontario and, or psychology and computer hardware at Alberta, or Linguistics and AI-ML at Nova Scotia, or Graphic Design with Image Processing at Quebec, or Economics and Anthropology at British Columbia or deal with Human Rights or Climate Scientists at the northern territories of Nunavut and Yukon with the Inuit peoples, polar bears and the AURORA BOREALIS. Even if you're trying to switch career paths and follow your hidden passions by exploring something new, uncharted and authentic, stuff you can never even imagine or do here in India, this is your time and opportunity!
And if you're planning to do your Post Graduation in Canada after getting MITACS, 20,000CAD is waived off your tuition fee. So Good Luck!! :))

Paul Jabez Talakayala,
Final Year

How did Tamil Nadu pull off a successful Chess Olympiad?

THAMBI
THE OFFICIAL MASCOT
44TH CHESS OLYMPIAD

Students

Articles

Chennai's Napier Bridge, wearing chequered black and white like a chess board, and mascot "Thambi", a horse clad in the traditional Veshti –Sattai with folded-hand greetings which are featured everywhere from milk packets to billboards, got people's attention all over India.

The Olympiad which is now a sensation in our country was initially scheduled to take place in Russia but due to the ongoing Russian-Ukraine war, the International Chess Federation (FIDE) started looking for new bidders. At that point of time, the All India Chess Federation (AICF) sniffed an opportunity. With no financial backing or sponsors at the time, the federation went out of its way to show its interest in hosting the event. India's international standing in the world of chess also helped in the bid as India stands 4th in the world following the US, Russia, and China. But AICF was racing against the time. This is where the state and central government authorities stepped in. The Tamil Nadu government backed the federation by guaranteeing $10 million to put up a bid in the first place. Together, the state and the central government have allocated Rs 100 crore for the event!

This Chess Olympiad is a team tournament where 343 teams are participating from 187 countries. 6 Indian teams are participating in the Olympiad and they are doing a fantastic job. Viswanathan Anand, a 5-time world champion opted not to play in the Olympiad and has taken over the mentor role for the young prodigies on the Indian side. The sponsors and authorities were also a step ahead by adopting new technologies like virtual reality and artificial intelligence to give an immersive experience to the fans where users can track the board moves of top players in the event. And that's how Tamil Nadu is hosting a successful Olympiad with its outstanding abilities. The chess Olympiad in India is not just an event, it is a celebration of chess!

Abirami S,

Final Year

Students

Articles

EXPERIENCE OF BECOMING THE
CORE COMMITTEE MEMBER AT LAKSHYA (EDC)
Journey towards the club

The notion of joining a college club hits a fresher very hard. They are told by seniors and peers to join various clubs of interest, especially those which would give them an overall experience in college–arranging events, taking leadership roles, etc. But it turns out that most are confused about what to choose. Until I joined Lakshya, I was in the same boat as others, sailing under the pressure to accomplish something along with academics.

I attended the fresher's meet at different clubs but was not hooked on any. One thing I was clear about was to holistically develop and explore the leader in me. I wanted a clean integration of education and skills that can be developed only through experience - people's skills, designing, marketing, communication skills, content making, etc.

During the second year, I happened to notice a form from Lakshya for the selection of an organizing committee for its Flagship event, Sycon. I filled it without a second thought, mentioning the verticals I was interested to work in, and that's where the journey began.

The assets made. I worked in the content writing team for Sycon'21. We wrote content for posters, brochures, and coupons distributed to participants; brainstorming on how to attract the audience to the event, through the text. Furthermore, as part of the team, I worked on curating questions to ask our star speaker that year, Dir. A.R.Murugadoss. This was a huge responsibility, as he was the most anticipated speaker. Inspecting the latest trends in film interviews, getting insights on the verbal etiquette to be followed while interviewing a big personality, thinking about which questions will get interesting answers, etc enhanced my ability to think from others' perspective and proficiency in teamwork.

Though Sycon'21 focused on the content writer in me, I explored other verticals I wanted to improve in upcoming events. The next vertical I worked on was sponsorship. Sourcing out to sponsors, explaining about the event, making them understand the value Lakshya can add to their product/service, designing deliverables for sponsors to market themselves at our event, negotiating on the sponsorship amount, etc definitely built me to analyze different businesses and their needs. Each sponsor was a practical case study. To me, event management was the most exciting. Being articulate, I actively participated in hosting events.

Writing speeches to deliver on the event day, responding to versatile queries from participants, managing the crowd, making event schedules, planning the overall flow of the event, and more, strengthened my time management skills and critical thinking ability. Marketing was the cherry on top.

Students

Articles

Lakshya does extensive live marketing of its events, visiting each classroom across all departments and years of study. I cherished it as I am fond of interacting with people. Developing marketing strategies to lure people into attending the event, talking about the benefits participants obtain, approaching strangers to talk about the event, etc built my self-confidence greatly.

Return on investment Now that I had contributed and learnt in the process, the next step on the ladder had to be climbed. Joining the core committee was already one of my short-term goals for the year, and I was the first one to fill out the form expressing my interest to be a core member. Attending the core committee selection interview, and getting the role felt like a warm recognition of my work. It comes as a huge responsibility to carry forward the legacy of the club; and I pour in much gratitude to all those who have lent their hands to me in this journey.

Ashwini Ramesh Kumar,
Final Year
Lakshaya - Core committee member,
SYCON '22 Organiser

CREATION'S DISPUTABLE CERTITUDE

The spectral sceptre of the liveless ones

Resounding more, than the

banter of these veil humans.

Can thinking aloud be more..

Do actions matter?

The Springing kind, unstable ones,

changing notions.

Presumption was a curse bought upon,

by ourselves.

the retaliation, require resolve

Bystanders ain't prime,

For one has to be the owner of his

own verdict.

Ashuthosh R,

Third year

Students

Articles

Kavya

Sports in my college life

I'm excited to share my journey in sports with SSN. Sports has always been an integral part of my life and I'm grateful for having the opportunity to represent SSN in various tournaments and matches. SSN has constantly motivated me to do my best.

During my first year, being a fresher with a lot of expectations, I joined the girls' basketball team. All my seniors were friendly and constantly supported me. They guided me both on and off the court. I was a day scholar but being in sports allowed me to stay and experience hostel life which was extremely fun and tiring at times. Balancing all the practice sessions for the upcoming matches and the curriculum was hard, but everything comes with a price. We went to a lot of matches within and outside of Chennai.

First Semester was hard for me to manage both studies and practice sessions. It was not like what we learned in school. The curriculum was different. I needed time to adapt to the new environment. My teammates and friends constantly supported me. During this period I got selected to represent the Anna University girl's cricket team in the South zone which was held in Tirupati. We practiced before our match at AU ground and got to know more about cricket and met a few wonderful people there. Then we moved on to the even semester which was cool. We had a lot of fun events happening along with the SSN trophy. We started practicing extremely hard for our tournament. The SSN trophy tournament week was so much fun. We had matches that were organized by us and we also had other college teams in our hostels. We made some new friends and the experience was surreal. As soon as the tournament got over covid hit us hard. Hoping we will return in 10 days but it went on for about two years. My second year and third year nearly went away and there was no way to keep playing.

We moved to the Pre-Final year, and we had alternative days of online and offline college, but matches haven't resumed since covid. During the mid of even semester, we had a single tournament at Sri Venkateshwara College of Engineering and finally, we had the opportunity to represent our college, we were introduced to our juniors for the first time and that was our last tournament where we got to play with our seniors.

And now, once again I had the opportunity to represent the Anna University girl's cricket team in South Zone, an Inter-University tournament which was held at Andhra University, Visakhapatnam. We traveled via train which was full of enthusiasm. Reaching Vizag in the middle of the night we had our first match by 9 am the next day. We got up early and geared up for the match, though we won the toss and decided to bat first we scored a decent total and unfortunately, we lost that match. The experience was great and I got to learn a lot of new things, and meet new people. The umpires were cool. We spoke about the match and learned a lot about the game. I had a wonderful

Poetry

Corner

R. Arvind Alagappan

time with my AU team. After our End Semester exams for the 6th semester, I'm finally moving into my last year with SSN. I'm looking forward to all the great experiences waiting for me ahead and to representing my college for one last time!

Kavya, Final Year

STILL WATER

The water is still, peaceful, and calm,
Enriching the lake by singing beautiful psalms,
Understood only by the birds and animals that gather,
To satisfy their thirst under the humid weather

Struggling to carry a large load on his back,
Arrived a man on the scene,
Thirsty as he was, he reached the lake,
Bending down to cup his palms, quenching his thirst

The water is still, peaceful, and calm,
Being transparent, like having an open mind,
It is fluid, easily adaptable,
Abundant, natural and enriching

Struggling to carry a large load on his back,
A nasty thought ran across the head of that man,
Boxes, perished food and those to be disposed,
He dumps it into the lake, as far as he can throw

Man is arrogant, impatient and unkind,
Keeps secrets to himself, doesn't share,
He wants to rule, but doesn't change,
He cares about himself alone, and no one else

If water and man were no different,
The world would turn around,
Happiness, love, peace and kindness,
Would be the only emotions that surround!

AS I GREW UP

As I grew up,
I noticed how studies did not define intelligence,
I noticed how morality cannot be obtained by being taught,
I noticed how respect cannot be earned by intimidation

As I grew up,
I understood that making mistakes were the right way to learn,
I understood that bad days can never last forever,
I understood that "Impossible" itself says "I'm possible"

Poetry Corner

As I grew up,
I learnt to sympathize and empathize other's sorrows,
I learnt to realize that different views can perfectly coexist,
I learnt to accept responsibility and be independent

As I grew up,
I noticed, understood and learnt different things,
But what I keep wondering,
Is how much more does life have to teach?

R. Arvind Alagappan,
Third year

FEELINGS

Feeling lost, feeling blind
Feeling scared, feeling sad
Feeling like there's no time
Feeling like a victim in a crime
Feeling left out with no doubt
Feeling like a clown.
Feelings like these aren't good
Feelings like these are not part of the rite of passage
It's okay not to be okay
Is not always okay.
Let the feelings out
Let them lose
Let them pour out
Let them leave no clue.
Break the shackles and fly,
Out your cage
To a place where you feel
Feelings that make you hope
Feelings that restore your faith
Feelings that make you believe in good things
Feeling loved, feeling safe
Feeling happy, feeling warm
Feeling motivated, feeling good
Feeling like a person's who's put together
No,
Becoming the person who's put together!!

Sriya Vemuri,
Final year

YOUNG AND DUMB

On the window side, I was sitting.
Wind on my face
Friends in my space.
We were, jumping and dancing, laughing and screaming.
Feeling high from the lack of sleep.

Poetry Corner

Cause we were young and dumb.

In the forest side, I was hiking.
Sweat on my face
Friends in my space.
We were, walking and talking, singing and teasing.
Feeling high from the rush of climb.
Cause we were young and dumb.

On the beach side, I was relaxing.
Sand on my face
Friends in my space.
We were, playing and running, sloshing and splashing.
Feeling high from the kisses of waves.
Cause we were young and dumb.

Koushika Padmanaban, 2022 graduate

TAMIL VERSE

This Tamil verse is dedicated to 4th year seniors who are nearing their end of college life.

கல்லூரி தோட்டத்தில் வெவ்வேறு செடிகளின்

மொட்டுகளாய் சேர்ந்து,

முழு பூவாக மாறும் பயணத்தில்

வெவ்வேறு செடிகளில் மலர்ந்தாலும்

மகரந்தம் ஆகிய நட்பை பறிமாறிக் கொண்டோம்.

நட்பு கசந்து பிரிந்த காலமும் கடந்து வந்தோம்.

மழை இல்லாமல் வாடிய காலமும் கடந்து,

அளவற்ற மழை வந்து இன்பம் தந்த காலமும் கடந்து,

நாலாண்டு இறுதியில்

முழு மலராய் மலர்ந்து இதோ

புன்னகை புரிகிறீர்கள்!

சில ஆண் மலர்களுக்கு முள்ளும் வளர்ந்தது.

இந்த தோட்டத்தி ல் இருந்து செல்லும் மலர்களே !

உங்களால் இந்த உலகம் பயன் அடைந்து வாழ்வதற்கு

அழகிய இடமாய் மாறட்டும்!

Shankararaman
Final year

Faculty

Article

Prof. R. Srinivasan

8 AM in IT department corridor

Srinivasan: Good morning, Sir

HoD: Good morning, Sir. Today I have a meeting. So, you finish the staff club related meeting.

Srinivasan: Yes Sir!

(8.30 AM in Srinivasan's office)

Typing email…

Dear Friends,

All are requested to attend this meeting.

Venue: PG lab, Time: 10 AM.

Thank you

(10.00 AM in PG lab)

Srinivasan: Good Morning. HoD Sir has asked me to conduct this meeting. The agenda is about the department staff club. Is Malathy madam here?

Radha: She is arranging coffee for this meeting.

Vasuki: Only coffee?

Uthayan: Malathy Madam! Why are you always providing coffee for any event? This is summer. Why not Jigar Dhanda!

Mohanavalli: Sir! That's not available in the stores.

Kabilan: Madam! I can arrange for that from Apollo Sindhuri.

Srinivasan: We need to regularize the department staff club and staff related events. All the departments have been asked to do this. There will be a central staff club coordinator from some department.

Chitra: Sir! Why do we need somebody from other department for our staff club?

Malathy: To regularize madam.

Srinivasan: What is this regularization?

Bhalaji: As per AICTE and NBA, regularization starts with PO setting.

Karthika: Do we need to set the POs for staff club?

Sripriya: Shall we make use of the UG POs?

Shahina: UG has many POs. I think we can make use of the PG POs. For staff club we do not need more than 5 POs.

(Many faculties are baffled @ this point)

Srinivasan: Shall we first fix the menu?

Sandanakaruppan: Sir! We can also include veg and non-veg soup.

Swathika: Do not confuse Sir.

Ashwinth: We can apply for an IFP with a title "Staff club Menu Fixing Using Deep Learning For IT Department of SSN College of Engineering".

Faculty

Article

Chitra: Why do we need IT department in the title?

Srinivasan: Madam, If it's for other department then it's a different problem. They can also apply for IFP.

Ashwinth: OMG! I was trying to joke, Sir.

Arulkumar: You should have told that first.

Thanikachalam: Malathy Madam, what are the good practices we follow in staff club? That need to be included in ISO document. Since we are forming POs we need to look at this also.

Sree Sharmila: Sir! With out a program how can we form POs?

Bhalaji: Madam! As per AICTE norms you can have multiple PO sets for a single program but Pos cannot exist without program.

Chitra: Sir! Last year we went for NBA …

Bhalaji: Madam! NBA norms are changed this year.

Srinivasan: Thank you, all. We can continue the meeting after a short break. Malthay madam has arranged for coffee.

Malathy: Hello everybody! Since Uthayan sir was asking for something for summer, I have also arranged for chill curd rice along with coffee. I welcome you.

(Srinivasan, Uthayan and Sandanakaruppan are sipping coffee and having curd rice. All are looking at them terribly)

Srinivasan: Excuse me sir! I'll go to washroom and come.

Uthayan: We'll also join after coming from washroom, Sir.

(After coffee break again, meeting started)

Srinivasan: We need to write down preferred objectives for our staff club.

Chitra: Sir! PO means program outcomes not preferred objectives.

Srinivasan: Oh...Sorry! But before that we need to attach staff club activities to a program.

Sripriya: It's wise to attach staff club with UG program.

Sasirekha: Since we are going to take the POs of PG, it can be joined with PG program.

Kabilan: We can go for separate program, Sir.

Ashwinth: We can apply for an IFP with a title "Attaching Staff club To Program Using Deep Learning For IT Department of SSN College of Engineering".

Chitra: Why do we need SSN College of Engineering in the title?

Srinivasan: Madam, If it's for other college then it's a different problem. They can also apply for IFP.

Chitra: Other college faculty – How can they apply for IFP in our college?

Faculty

Article

Bhalaji: Madam! There is a provision in incubation center through which other colleges can also participate in IFP.

Ashwinth: OMG!

Arulkumar: Were you trying to joke?

Ashwinth: ???

Sivamurugan: Sir! We can attach it with FDP.

(Everybody said "Wow').

Srinivasan: That's a great idea. We'll attach staff club with faculty development program. Then we can write down the program objectives.

Chitra: PO means program outcome.

Srinivasan: Oh…Sorry!

Shahina: If it's a program then first we need to design the curriculum that's the curriculum and syllabus of FDP which will be in align with the institute's vision and mission.

Uthayan: When are we going to fix the menu?

Vasuki: Sir! First, we need to design the COs of FDP. Then only we can decide on the menu.

Joesphene Julina: Why FDP? It's for staff club.

Sasirekha: Vasuki Madam is right.

Srinivasan: No..NO.., We need to write down the preferred outcomes of the staff club.

Chitra: PO means program outcome.

Srinivasan: Oh…Sorry!

Karthika: Why do we need to write down the COs of FDP. We are attaching staff club to FDP.

Bhalaji: Madam! That's where we need to refer to the new NBA documents.

Sripriya: Sir! First we started with POs.

Ashwinth: Sir! We can apply for an IFP with a title "Deciding whether PO or CO To Be written For Staff Club Attached to FDP Using Deep Learning For IT Department of SSN College of Engineering".

Srinivasan: Please Ashwinth!

Ashwinth: Sorry Sir!

Srinivasan: Bhalaji Sir! What is your opinion?

Bhalaji: Sir! That's your call.

Srinivasan: Shall we go for voting?

(All said YES. Voting happened. Many people supported POs of staff club even though Vasuki madam tried convincing all for COs of FDP).

Faculty

Article

Srinivasan: OK! Let us write down the POs of staff club.

Sripriya: Then we need to write down the performance indicators too.

Srinivasan: Madam! Why do we need PI? We can just write down some numbers.

Sripriya: Then that becomes subjective, Sir.

Srinivasan: What is subjective?

Bhalaji: Sir! As per ABET we may or may not go for subjective exam.

Joe: Sir! We also need to finalize the question paper pattern, the exam coordinator, and marks consolidation.

Vidhusha: What exams are we talking about.

Srinivasan: Madam, that we'll know only at the end of the meeting. What about the course code?

Shahina: Since other departments also have staff club, we may be asked to go for a common course code.

In that case, what are we going to do?

Srinivasan (proudly): Exactly! That's what I am coming to say.

Ashwinth (starts): Sir! We can apply for an IFP ….

(After Srinivasan folds his hands to Vanakkam position he stops)

Vidhusha to Shahina: Madam! What exams are we talking about?

Malathy answers: Staff club exams, Madam.

Vidhusha: ???

Sripriya: Sir! Let Malathy madam finish the POs then I'll circulate to faculty along with PIs.

Sofia: Why it has to be circulated to all the faculty?

Srinivasan (proudly); To get majority voting madam.

Vasuki: Sir!, last time I did not convey it properly about COs of FDP. Shall we go for one more voting?

Arulkumar: Madam, after five years.

Ashwinth: Are you trying to joke?

Mohanavalli: Related to PIs – instead of majority we can go for average.

Sasirekha: I'll create a google form and send it to all.

Srinivasan: That's a nice suggestion. Let us conclude the meeting. I kindly request staff club coordinator Malathy madam to prepare POs of the staff club. Then we all together will decide PIs of the staff club POs. Sripriya madam will coordinate this.

Chitra: What to do with FDP, Sir?

Srinivasan: We'll have another meeting in presence of HoD. Thank you all. Do not forget to follow the Bloom's taxonomy.

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Exoplanet Identification via Transit Photometry - Data Pre-processing

The identification of extrasolar planets is an important problem in astronomy, having major implications for planetary science, astrophysics, astrobiology, SETI, and more. Since 1995, when the first exoplanet was discovered, over 4,100 exoplanets have been confirmed. Of these, over 75% were discovered using the Transit Photometry method. This involves the analysis of tiny decrease in a star's observable brightness because of an exoplanet passing in the stellar disk. The processing of these 'light curves' is complex, with many nuances and intricacies, traditionally necessitating a trained astronomer to sift through piles of data. With the advent of newer observatories, such as TESS, JWST, and WFIRST, the number of observations that must be processed will only increase.

Computer models for exoplanet identification may help partially automate the process of examining the vast volumes of photometry data which will be obtained from these newer observatories. They may even have the potential to find elusive exoplanets that have been overlooked. The task (T) is assessing if a light curve is indicative of the presence of an exoplanet. It is also important for the models to avoid misclassification of non-exoplanet stars. The models gain experience (E) by repeatedly sifting through labelled light curves and optimizing their parameters in the process. Data plays an important role in any machine learning model. Here in this article, I would like to present data preprocessing required to get better predictions.

DATA COLLECTION AND DETAILS

The dataset under consideration is available on Kaggle. This dataset is a selection of "cleaned" observations that have been classified into confirmed negatives and positives with high certainty by expert astronomers. Each denoised observation consists of 3,198 light intensity readings. The dataset has also been pre-partitioned into a train and test set, each having 5087 and 570 samples respectively. Each sample consists of 3,197 flux (light intensity) readings over time along with a label specifying if the observation is indicative of the presence of an exoplanet. Observations with specific, regular patterns of dips in flux measurements sometimes imply the presence of an exoplanet. This is a result of the planet(s) occluding a part of its/their parent star. However, many transit light curves are not indicative of a planetary transit. Many phenomena, such as binary star systems, result in light curves that are deceptively like exoplanets. This is an important challenge for a detection model to overcome. This complex characteristic makes it an apt problem for machine learning-based models. The data was obtained by the dataset creator from the Milunski Archive, which contains all the observations recorded by the Kepler observatory, open-sourced by NASA.

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DATA PREPROCESSING

Normalization: Prior to normalization, the flux readings ranged from around negative 2.4 million to positive 4.3 million. Using L2 normalization, this range was brought down to (-0.77, 1). The mean was also brought down from ~130 to a value close to 0. Similarly, the targets, which were either 1 or 2, were shifted to be either 0 or 1, with 1 indicating the presence of an exoplanet and 0 indicating otherwise.

Partitioning: From the test set, 10% of the positive and negative training samples were randomly removed to form a validation set. This set was used for all model comparisons, detecting overfitting, etc. The test set (as partitioned by the dataset creator) was only used at the final stage, after the best model had been selected.

Oversampling: A key challenge in the problem of Transit Photometry-based detection is the significant class imbalance. By a factor of ~136, there are far fewer positive samples (exoplanet stars) than there are negatives (non-exoplanet stars) within the dataset. While most stars have planets, the orbital plane of an exoplanet must be perfectly aligned with the observer (Kepler), thus resulting in the detection of very few planets relative to the number of stars observed.

To address this massive class imbalance, below given oversampling techniques were used:

SMOTE: The Synthetic Minority Oversampling Technique, or SMOTE, generates synthetic samples for the minority class. It was first introduced by N. V. Chawla et al. [3] in 2002. Using SMOTE, the number of positive samples jumped from 34 to 4,545 - equivalent to the number of negative samples.

ADASYN: The Adaptive Synthetic Sampling Method for Imbalanced Data, or ADASYN, is an approach built on SMOTE. It was first introduced by Haibo He et al. [4] in 2008. Using ADASYN, the number of positive samples increased to 4,538.

Augmentation: Another approach to addressing the class imbalance problem is augmentation (which itself can be seen as a form of oversampling). This helps create additional positive samples. The augmentation strategy used here involved shifting each measurement forward in the time series by a certain randomly generated integer in the range (0, 3,197). Values that were shifted beyond the length of the series were added back to the start of the series. This is also referred to as rotation.

Srinidhi Sunkara
2021 Batch

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A Brief Peek into Life after College

Introduction:

This article is a basic self-help guide/cheatsheet for young undergrads who are currently in confusing situations. The purpose of this article is to affirm that it's okay not to be okay and give you a few pointers that may help you on your journey ahead for the next 4-5 years. This is wholly from the perspective of a Graduate with a full-time job in her early twenties, working in an MNC. I hope this article resonates with you - the confused Undergrad and gives you the ways to make your own light when you find a dark tunnel ahead.

In one line, (TLDR):

You really understand why your 4 years at SSN was the best time you ever had or probably will ever have in your life.
Pursuing your higher studies - MS, MBA, MTech, MIM MEM., etc is an entirely different ball game since its 'College Life Part 2'. It comes with its own set of pros and cons. When you enter the corporate world be it anything - startup or MNC, that's when the reality of life hits you. You can't look for an adult to solve the problem because you are the adult there. You have to camp outside your comfort zone and break every shell there ever was. You are accountable. You are responsible.

The Gap between Student World and Corporate World

To be brutally honest. Corporate life can never be as joyful as college. You have to have impeccable attendance and report on time. Mostly there are no 'Friends' - its 'Colleagues'. And colleagues are rarely friends. You can call people by their names. Age plays almost no role. Everyone gets the same treatment. Mistakes are forgiven but not without initial drill down; everything will be recorded / documented in detail. You have to be proactive, deliver your best and be a strong team player. But on the bright side you get to network a lot and get to know people of diverse cultures. You can socialize and form strong corporate connections to collaborate and help each other. Moreover you get more freetime than college days for yourself and to spend with friends and family. You can pursue your hobbies or travel extensively and utilise the entire weekends since there are no homeworks and no exams. After you log out, you are totally in control of your life and freedom. Never compare salaries or CTCs with your peers. Every CTC has its pros and cons. Aim higher while being satisfied with what you have.

What to do with Salary:

Having a lot of money for the first time ever is overwhelming. And it's all yours. No one to account for but yourself. Before you spend it on all your fantasies and bucket lists, you have to stop and (not even save) INVEST. You have to learn to manage finances well or it could lead you to exploiting your own wealth. You also need to set up your own emergency fund, pay your taxes and allocate funds for medical/health insurances. All these must have been taught in schools, but

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now here we are. Now, where and how to invest? There are a lot of options. The safest is a Fixed Deposit or a Recurring Deposit at your Bank. Another solid investment scheme is the Sovereign Gold Bond offered by the Reserve Bank of India. Investing in an SIP Mutual Fund is also a great idea for larger returns. Do not buy jewelry as investments. Cars, bikes and gadgets cannot be assets. They are typical liabilities. Do your research as there are tons of online resources. You will understand that compounding has great power and you will get the full benefit of it if you invest in your 20s. Never work for free. Always demand to be paid, especially internships. If you are not paid, it simply means that you or your time is not worth the interest of the company and we should gracefully exit from those ventures. Never let anyone take your work, time or efforts for granted. The ultimate path to financial freedom is to have more than one source of income and eventually make your money work for you.

Further into the immediate 'Great Beyond':

If you desire to pursue your higher studies or switch jobs you need to put in extra effort and brutally sacrifice your weekends and manage to prepare for entrance exams/interviews. Never quit your job to accommodate this. If you do, it will cost you in the long run.

Whenever you think about choosing a career path and speak to professionals in the field and ask them what their day looks like. If it resonates with you then ask them more tips and tricks that helped them get there. Try to solve real-time problems with your knowledge. That's the way you can give back to the world. Having multiple side projects will not only help in you resume and career but also exponentially increase your mastery over the skill.

Never do 'only' your full-time job. You most definitely need to make time for other activities - hobbies, family time, travel, passion project, side business. Read a lot of books, as it can intellectually enhance your knowledge and talk to people you find inspiring. Choose habits wisely and be consistent so that it can compound over time and the time in your late teens / early 20s is priceless. Anything that you compound now will pay back a lot more than you can ever imagine at a later stage in life.

If you are looking out for a signal, here it is: Venture out. Start coding. Collaborate. Enroll in Hackathons. Join that course. Start up. Get the work done. Take action. Finish what you started. Remember - YOLO. If not now, then when? It is absolutely okay to fail. You never lose. It's always winning or learning. The bug at the back of your mind that says you aren't good enough or it's too risky or not worth it - Don't ever listen to it. Try. Fail. But try again. Not just harder but smarter. It is an essential skill that you will need in life. Everything was served to you on a plate in college but you have to hunt it yourself later, with a lot of aspects waiting to hunt you down. Take it up as a challenge. Face it with determination and a 'Can Do' attitude with utmost discipline and diligence - you owe it to yourself.

And Remember: "As the going gets tough, only the tough get going."

**Sushmita Rajtilak,
2020 Batch**

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The GATEway

GATE is an entrance exam for pursuing master's & Ph. D Programs in India and gateway for jobs in Public Sector Units (PSUs). The exam is conducted jointly by the Indian Institute of Science (IISc), Bangalore and the seven Indian Institutes of Technology (at Bombay, Delhi, Guwahati, Kanpur, Kharagpur). Additionally, GATE opens up a pathway to later pursue exciting careers in top notch product-based companies (Google, Amazon, Microsoft, DE Shaw etc.) in engineering and research roles. GATE qualified applicants are also eligible for the award of Junior Research Fellowship in CSIR Laboratories and CSIR sponsored projects. Some foreign universities such as the National University of Singapore, The Nanyang Technological University, Technical University of Munich and RWTH Aachen accept GATE score as an entry-level criterion. Pursuing Masters abroad would incur a minimum cost of 30 lakhs whereas a GATE qualified student would receive a stipend of Rs.12,400/month from MHRD.

A lot of Government agencies (DRDO, ISRO, BARC, BEL) hire post graduates with specialization in different fields. A few such organizations are: Bharat Heavy Electricals Limited (BHEL), Gas Authority of India Limited (GAIL), Hindustan Aeronautics Limited (HAL), Indian Oil Corporation Limited (IOCL), National Thermal Power Corporation (NTPC), Nuclear Power Corporation of India Limited (NPCIL), Oil and Natural Gas Corporation (ONGC) and Power Grid Corporation of India (PGCI). Direct recruitment to Group A level posts in Central government, i.e., Senior Field Officer (Tele), Senior Research Officer (Crypto) and Senior Research Officer (S&T) in Cabinet Secretariat, Government of India, is now being carried out based on GATE score.

Candidates who have completed graduation or are in the prefinal and final year can take up GATE. GATE examination will be conducted for 3 hours duration and they consist of 65 questions for a total of 100 marks. The questions are of type both MCQ and MSQ. The essence of GATE exam is to scrutinize the core knowledge of students and how much they are acquainted with their graduation disciplines. A deep and conceptual applicative understanding along with problem solving ability is needed to score well in GATE. It is highly recommended that aspirants thoroughly familiarize themselves about the exam and prepare a well-planned out schedule to follow during their preparation.

K. Srividhyasaradha
2020 Batch

Impact of IoT on the Seafood Export Industry

You could be wondering how an IT graduate ended up running a seafood export company. Now that is an entirely different story which I would elaborate in the next magazine. This article talks about how the internet shaped the face of the seafood export industry.

India has a got vast coastline and the seafood export industry has got a huge potential because of this. Only 1 % is consumed domestically and remaining 99% stock is exported. The 5 major stake holders of the seafood export industry are:

1. Exporters/ Principal Production System
2. Raw material suppliers/ Backward Linkages
3. Buyer/ Forward linkages
4. Business Development services
5. Supporting Institutions

The business model is as below:

Technical / Supporting institutions		
Raw material suppliers / Backward linkages	Exporters/ Principal production system	Foreign buyers / Forward linkages
Business Development Services		

During earlier days of seafood export, before the evolution of internet, most of the activities were time consuming and it was poorly networked. However, after the emergence of internet, the seafood industry got a boost up because of the better connectivity among the stakeholders. The impact of internet on all the entities of the Indian seafood export industry with specific reference to the frozen sector is huge. Following gives a gist of "the before and after" effects of internet on the seafood industry.

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Supporting Institutions
1. Registration of boats was tedious and time consuming
2. Obtaining certificates was done manually
3. Less number of members in SEAI

Raw material suppliers
1. Registration of boats was tedious and time consuming
2. Obtaining certificates was done manually
3. Less number of members in SEAI

Exporters

Buyers
1. Mainly through buyer agents
2. LC Payment
3. Less regulations
Doubt over exporter

Business Development Services
1. Heavy power consumption
2. Riskier machines
3. Simple packaging styles
4. Poor logistic control
5. Outdated freezing methods and stacking in cold store

Industry before IoT and internet

Supporting Institutions
1. Online record keeping of exporter details
2. Monitoring of various test reports through online server
3. Ship and boat vessel entry made online for faster, safer and easier processing
4. SEAI association strength increased due to strong networking and social media

Raw Material Suppliers
1. Faster fishing methods
2. GPS enabled boats
3. Government e-initiative for market price knowledge
4. Sustainable fishing and aquaculture processes
5. Online fish sale
6. Safer, eco friendly farming methods

Exporters
1. Value added processing methods
2. Global reach of products - huge online presence
3. Faster and safe banking methods
4. Sophisticated logistics support ensures timely delivery
5. Online payroll system and employee database
6. Monitoring by CCTV cameras

Buyers
1. More payment methods
2. Data availability of local market
3. Stringent rules and regulations
4. Faster and easier communication with help of online networking

Business Development Services
1. Palletized stocking in cold store
2. Online maintenance of stock
3. Stronger cartons and attractive packaging and labeling
4. Online laboratory test report
5. Easier shipping and tracking of containers

Industry after IoT

I hope everyone reading this article has got a small idea of how my industry functions and how technology and internet has impacted the entire seafood export industry.

Dr. Vikas P. V.
2010 Batch

Photo Booth

Sushmethaa Muhundan
2015 Batch

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Vaidyanathan Ramasubramanian
2010 Batch

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A bridge over a river with a city in the background

Sky full of stars.
Cherry spring state park, Pennsylvania

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Thank you