

# SMRITI

*Department of  
Computer Science and Engineering*

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## **EDITORIAL DESK**

In this edition, we are delighted to present to you, all of the commendable accomplishments of the department, during this quarter. This edition is replete with information about various competitions, workshops, paper publications etc, that the department has been a part of.

During this period, the department organized workshops on Vue JS, Edge computing, developing IoT based Applications, Stream Data Management and Analytics in Big Data. We appreciate the time and effort taken by the organizers in making this happen.

An orientation program for the ME (CSE) students and BE (CSE), second year students was held, to ease them into the department. We commend the efforts taken by Dr. R. Kanchana for ME admission. Heartfelt congratulations to Dr. D. Thenmozhi and Dr. B. Bharathi for receiving the best teacher award. Another notable event was the academic audit that was conducted in the department on 23rd September 2022.

Our students have always contributed to the growth of the department by participating in various technical and non-technical events. Many teams of students enrolled for Smart India Hackathon (SIH) 2022, of which three teams reached the grand finale. The department congratulates the students and mentors of the team “ByeWorld” and “Kyogre” for winning a cash prize of Rs. 1L at SIH 2022. The efforts taken by the students in organizing and participating in a coding competition are commendable. The placement season of the department also had a great start, with students bagging incredible packages from top companies.

We are also very proud of the achievements of V.S. Sathvika of the second year, who secured first place, along with her team at the Inter Engineering College State level Table Tennis Tournament, held by Sairam College of Engineering.

We are delighted to note that the department’s accomplishments are not limited to a single scope by any means. This edition clearly shows that the students and teachers of the department excel in everything they do. We look forward to a very successful upcoming quarter for the department. Happy Reading!

**SMRITI Editorial Team**

# EXTERNAL INTERACTIONS AND RECOGNITIONS

## Board of Studies

1. **Dr. Chitra Babu** attended an online special AU BoS meeting on 27th September 2022 to consider the inclusion of mandatory Tamil courses and skill based courses from III - VIII semesters for the university departments and the non-autonomous affiliated colleges.
2. **Dr. Chitra Babu** attended the 34th BoS meeting of the Faculty of Information and Communication Engineering for the non-autonomous colleges affiliated to Anna University that was held on 1st August 2022 in the Academic Council Hall, Administrative Building at CEG, Anna University Chennai.
3. **Dr. D.Venkatavara Prasad**, as a BOS member in the department of Computer Science and Business Systems ,Rajalakshmi Engineering College reviewed the syllabus for the following elective subjects: 1. AI19P73 Foundations of Robotic Process Automation 2. CS19P18 Deep Learning Concepts on Aug 16, 2022.

## Invited Lectures - Outside SSN

1. **Dr. T.T. Mirnalinee** delivered a lecture on AWS at VIT on 18th September at VIT along with Samyuktha, final year CSE student.
2. **Dr.S.Rajalakshmi** acted as the resource person and delivered the theory and hands-on sessions for a one-day workshop on "Machine Learning and its Applications" on 16.09.2022 for II year MCA students conducted by PG and Research Department of Computer Science and Applications (MCA), Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai.
3. **Dr. R. Kanchana** delivered a lecture on Data Lakes on 24th and 26th Sep 2022 as a part of Online Education program for HCL executives.
4. **Dr. J. Suresh** delivered a talk on "Technical Paper Writing and IPR" at the Institutions Innovation Council and ECO Club on 13th August 2022, organized by Prince Shri Venkateswara Arts and Science College.
5. **Dr. K. Lekshmi** delivered a talk on "Computer Vision Applications on ML-IoT Integration System" in six day Faculty Development Program on Computer Vision and its Applications held on 22-08-2022 at SRM Institute of Science and Technology, Kattankulathur.
6. **Dr. B. Prabavathy** delivered a lecture on "Hadoop and Mapreduce Programming " in a One Week Virtual FDP titled "Big Data Analytics - Research Perspectives and Tools" conducted by the School of Computer Science and Engineering (SCOPE), VIT Chennai during 02.08.2022.

7. **Dr. A. Chamundeswari** was invited as Chief Guest for Association of Engineers, National Level Technical Symposium, 2022 in GKM College of Engineering and Technology, Chennai on 27th Oct 2022.

### ACM - India

1. **Dr. Chitra Babu** attended the ACM India Learning Initiatives Committee Meeting to discuss the monthly webinars (academic and industry), minigraphs, summer/winter schools and also new initiatives such as creation of technical content that could be telecast through Swayampraba on 12th August 2022.
2. **Dr. Chitra Babu** attended the ACM India Professional Engagement Committee meeting to discuss how Professional Chapters can synergistically work together with Student Chapters and SIG Chapters to create a vibrant ecosystem. Dr. Chitra Babu played an active role in initiating the ACM Bangalore Professional Chapter.
3. **Dr. Chitra Babu** is part of the panel that is aiming to come up with a report on the status of undergraduate CS education in India as part of ACM's efforts along with Prof. Pankaj Jalote, IIT Delhi, Prof. M. Balakrishnan, IIT Delhi, Prof. Bijendra Jain, IIT Delhi, Prof. Venkatesh Kamat, IIT Goa, Prof. Timothy Gonsalves, ex-Director of IIT Mandi. Dr. Chitra Babu attended a meeting regarding a tentative framework for this on 9th August 2022.
4. **Dr. Chitra Babu** as ACM India iSIGCSE Chapter Chair, briefed about ACM India and iSIGCSE in the beginning of the 4th edition of the quarterly webinar on "Unlocking the Quantum Advantage" by Dr. Andris Ambanis, Latvia University followed by a fireside chat jointly Organized by TCS Research, ACM India and ACM iSIGCSE Chapter on 29th September 2022.
5. **Dr. Chitra Babu** as one of the PC Chairs, attended the COMPUTE 2022 planning meeting on 17th and 26th September 2022.
6. **Dr. S. Saraswathi, Dr. A. Beulah and Ms. S. Angel Deborah** acted as evaluators for ACM-W Hackathon, and judged 9 projects on 10-09-2022 for the first round and 2 projects on 16-09-2022 for the second round of ACM-W Hackathon.

**HCL Jigsaw 3.0:** **Dr. S. Kavitha and Dr. R. Priyadharsini** served as jury panel members for HCL Jigsaw 3.0 Grand finale on August 28, 2022 for Grade 7 students on the topic "Making Sports a Part of Our Community"

### Nalaiya Thiran – an experiential project-based learning program:

**Dr. T.T. Mirnalinee** acted as expert in Naan Mudhalvan Regional Conference as a panelist on the topic: "Enabling Students' Participation in NM program - Challenges and Solutions" along with Divya Innocent, IAS, TNSDC on September 12th.

**Anna Centenary Library, Chennai:** - Dr. Chitra Babu has been onboarded as a member of the recommendation committee by the Directorate of Public Library for recommending books in the area of Information Technology for the Anna Centenary Library at Chennai as well as the Kalaignar Memorial Library at Madurai.

### DC Member

1. **Dr. B. Bharathi** attended confirmation DC meeting on 22-09-2022 for two research scholars of SRM-Vadapalani in online mode
2. **Dr. S. Kavitha** attended a Synopsis meeting at SRMIST, Kattankulathur for Mr. V. Sabapathi on 12-09-2022 at 2.30 P.M in physical mode.
3. **Dr. J. Suresh** acted as a Doctoral Committee Member and attended the Synopsis Meeting for Mr. C Arun, PhD Scholar of Dr. C. Lakshmi, SRM Institute of Science and Technology on 28.09.2022 (In Person).
4. **Dr. A. Chamundeswari** was invited as a DC member to attend Ph.D Comprehensive meeting for a research scholar at SRM Vadapalani campus.
5. **Dr. T.T. Mirnalinee** acted as DC member and attended the synopsis meeting at SRM University.
6. **Dr. J. Suresh** attended as a Member of the Synopsis Approval Meeting for the scholar Mr. P. Harikumar, convened by Dr. Ananda Mala, Prof/CSE, Easwari Engineering College, on 05.08.2022.
7. **Dr. D. Thenmozhi** attended a DC meeting for two research scholars at Saveetha School of Engineering on 5th September 2022
8. **Dr. S. Kavitha** attended a comprehensive viva of the research scholar on 18.08.22 of SRM- KTR in online mode.
9. **Dr. S. Kavitha**, attended a DC meeting for the scholar on 08.08.22 of SRM - KTR in online mode.
10. **Dr. J. Bhuvana** attended a First Doctoral Committee Meeting for a scholar registered in SRM Institute of Science & Technology, Kattankulathur via online mode on 4 August, 2022.
11. **Dr. K. Madheswari** attended a DC meeting for the scholar Ms. Thaya I M (Full-time) on 11.08.22.

## Istinye University, Turkey

First online meeting was conducted with Dr. Senol Piskin (Professor, Istinye University), Dr. Femilda Josephin (Istinye University, Turkey) on 21-09-2022 to discuss the projects to be carried out in collaboration with SSN. Shruti Sriram, Varsha Yeshwanth, P Pranith, K Sowmya Mrithula KL, Gokul Prakash R, Padma Pooja C, Josephine Varsha, Fathima Naushin A R, Gayathri G L, Sushil Khadka, Sowmya Ganesan of III year and IV year CSE students attended along with Dr. T. T. Mirnalinee Professor & Head, CSE and Dr. J. Bhuvana, ASP, CSE. Three projects were identified during the meeting followed by the discussion on the same.

## Chettinad Health City

**Dr. T.T. Mirnalinee and Dr. R. Kanchana** had a meeting with the team from Chettinad Health City, Kelambakkam, headed by Dr. R. Arunkumar for possible collaboration in terms of projects on 31st Oct 2022

## Certified Ethical Hacker

Dr. J. Suresh, Dr. V. Balasubramanian completed the Certified Ethical Hacker course certification from EC-Council on October 8, 2022. The test comprised MCQs from Cryptography, Application Hacking, System Hacking phases and attack techniques, Perimeter testing, Reconnaissance techniques, Cloud computing. This certification helps to understand the latest hacking tools, techniques, and practices used by hackers and cybersecurity professionals.





# INDUSTRY COLLABORATION

## Valeo India Pvt. Ltd

1. **Dr. R. Kanchana** visited Valeo India Pvt. Ltd, Chennai, a global automotive supplier headquartered in France on 17th Aug 2022 for a possible industry collaboration
2. **Dr. T. T. Mirnalinee and Dr. R. Kanchana** interacted with Mr. Phani Kalidindi, Valeo India Pvt. Ltd, Chennai, on 15th Sep 2022 in an online meeting, for a possible industry collaboration.

## Ford Motor Private Limited, Chennai

Dr. T. T. Mirnalinee, Dr. V. Balasubramanian visited (along with a team from SSN comprising Vice Principal, ECE HoD, IT HoD) Ford India on 22nd Aug. 2022. The salient points discussed are regarding MoU between SSN & Ford, One Credit Course, Learning and Development proposal for SSN & Ford team and offering Internship for students. In continuation of the above, Elaborate training requirements were discussed on 28.10.22. Also a one credit course on "IoT Security" is starting on October 31, 2022 and ends on November 11, 2022. The session is offered from 3.30 PM to 5.30 PM.

## HCL Technologies

1. **Dr. T. T. Mirnalinee, Dr. P. Mirunalini and Dr. B. Prabhavathy** attended the HCL- SSN collaboration meeting on 29/08/22
2. **Dr. R. Kanchana** interacted with HCL team on 14th Sep 2022 to elaborate more on her project in the area of Data Analytics. **Dr. T. T. Mirnalinee** discussed further on other avenues for collaboration.
3. **Dr. V. Balasubramanian** interacted with Mr. Pranjal Kumar Barua, Mr. Sumon, Shiv Nadar Foundation, to get connected with HCL Shiksha and explore if this project "Lowest Cost Smart Board - A Seamless Teaching Experience" can be used.
4. **Dr. T.T. Mirnalinee and Dr. R. Kanchana** interacted with HCL team Shri. Seshadri to understand the trends in healthcare and future directions on 28th Oct 2022. HCL team earlier had a walk through of our projects. **Dr. J. Suresh, and Dr. Y.V. Lokeswari** also participated the meeting.
5. **Dr. Shashikant Albal** convened a meeting with HCL along with **Dr. C. Aravindan and Dr. T. T. Mirnalinee** to discuss the possibilities of mentoring the HCL Engineers in the capstone project on October 12th. Followed by the discussion we had a subsequent meeting along with the faculty members interested in mentoring the capstone project.

## Caterpillar India Engineering Solutions Pvt. Ltd

1. **Dr. Chitra Babu along with Dr. Prabavathy** and the three final year students Susshaanth, Sharvesh and Nithin showed the final demo of the consultancy project on "WebApp Creation using WYSIWYG Editor (Builder.io)" to the Caterpillar Digital Senior Software Engineering Manager



and the technical team on 12th August 2022. The project has been signed off by the CAT management successfully and the P.O has been generated for the same.

2. **Dr. Chitra Babu** coordinated with Caterpillar technical team to facilitate the visit of 3 students (Sushaanth, Sharvesh and Nithin) to the Caterpillar office from 27th July to 5th August to work on the consultancy project that is being done jointly with **Dr. B. Prabavathy**.
3. **Dr. Chitra Babu** coordinated with the Caterpillar technical team and facilitated the visit of three students, Aravind Kannan, Anand Krushna and Jayakrishnan on 19th August 2022 to work on the mobile Full Text Search consultancy project that is being done jointly with **Dr. S. Rajalakshmi and Ms. S. Angel Deborah**.
4. **Dr. Chitra Babu** along with three final year students attended a meeting with the Caterpillar technical team to discuss the progress made on the FTS Consultancy project on 29th September 2022.

### Emids Technologies, USA

**Dr. T. T. Mirnalinee, Dr. Venkata Vara Prasad and Dr. N. Sujaudeen** interacted with Dr. Karthik Ramesh, Vice President - International Markets | Head Transformation and Innovation Emids, Health Care Industry and Alumni of 2002 to initiate the process of MoU to carry out collaborative research work in multi disciplinary areas on 27-09-2022 . To start with, a Hackathon will be jointly conducted for the students of SSN in the month of October.

### Cognizant Technology Solutions

**Dr. T. T. Mirnalinee and Dr. N. Sujaudeen** interacted with Mr. Rajendrakumar, Cognizant Technology Solutions, Alumni, 2002 ECE Department on the curriculum for potential contribution to deliver certain courses in industrial aspects on 26-09-2022. He has agreed to deliver Guest Lecture / Workshops on the current trends in the Industry.

### TransUnion

**Dr. T.T. Mirnalinee, Dr. R. Kanchana, Dr. A. Chamundeswari and Dr. V. Balasubramanian** had a meeting with the team from TransUnion, Chennai on 21st Oct 2022 and discussed the possibility of collaborating with them on workshops, faculty training, Hackathons, talks, etc. The discussions were fruitful, and MOU is in progress.

# PUBLICATIONS

## Patent Details

**Dr. R.Kanchana** along with **Dr. S. Selvakumar** (Director, IIIT, Una, HP) published a Indian Patent on “A System and Method for Unification of Heterogeneous Immunization Systems and Improvement of Data Quality (UniHISID)” on 2nd Sep 2022. (Application No. 202241040203)

## Journal Publications

1. **Dr. S.V. Jansi Rani**, published a paper titled, “Human Wildlife Conflict Reduction Technology using YOLO Machine Learning Model, ISSN: IF 1.733”, Indian Journal of Natural Sciences, Vol.12, Issue 69, 36327-36333, Clarivate.
2. **Dr. B. Prabavathy, Chaithanya A, Hariharan R, Harishkumar S**, published a paper titled, “Enhancing GraphQL Data Fetching Technique” in International Journal of Computer Applications 184(20):1-6.
3. **Vikram, Adithya, Anusha Chandrasekaran, SK Srinithyee, and R. Priyadharsini**, Published a paper title "Forensic face image generation and recognition." *Romanian Journal of Information Technology and Automatic Control* 32, no. 3 (2022): 85-94.
4. **Dr. R. Priyadarshini, Sharath Chander Pugazhenth** , **Shivaani Krishnakumar and Soundarya Jayakumar** published a paper titled "Outcome Prediction for One Day International Cricket Matches" in Indian Journal of Natural Sciences, 13(74) pp: 48220-48231.
5. **Mirunalini. P , Mirnalinee.T.T, Praveenkumar R** published a paper titled "Localization of Number Plate using Deep Learning Models" in Indian Journal of Natural Sciences, 3(74) pp: 47514-47521.
6. **Ujjwel Balwal, Rajalakshmi S, Angel Deborah S and Saritha M, Varshini Balaji, Sivakami S**, published a paper titled "Automatic Forest Fire Detection using Drones and Deep Learning Techniques", Indian Journal of Natural Sciences, 3(74), 47599-47607.
7. **Dr. D. Venkatavara Prasad, Lokeswari Y Venkataramana, Suresh Jagannathan**, published a paper titled " Pulmonary Nodule Detection Using Deep Learning Technique, in NeuroQuantology, Vol 20 Issue no 11 , Scopus 0.442 |DOI: 10.14704/NQ.2022.20.11.NQ66641.
8. **Ms. M. Saritha, Kavithasri A, Dr.Rajalakshmi S, and Ms.Angel Deborah S, Aishvarya S**, Automated Vehicular Accident Detection and Notification System, Indian Journal of Natural Sciences, 13, 74, Clarivate.

## Conference Presentations / Publications

1. **Rajalakshmi, Ratnavel, Abhinav Basil Shinow, Aswin Murali, Kashinadh S. Nair, and Dr. J. Bhuvana** published a book chapter titled, “An Efficient Convolutional Neural Network with Image Augmentation for Cassava Leaf Disease Detection”, CRC Press, 289-305, 10.1201/9781003307822, 9/8/2022.
2. **Karun, A., Divyasri, K., Balasundaram, P., & Dr. S.V. Jansi Rani**, (2022). Plant species identification using probability tree approach of deep learning models. Working Notes of CLEF.
3. **Srinath Srinivasan; S G Shivanirudh; Sujay Sathya; T T Mirnalinee**, “Exploring Bayesian Uncertainty Modeling for Book Genre Classification”, 2022 IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology (IAICT), 10.1109/IAICT55358.2022.9887417, BALI, Indonesia, IEEE, 16 September 2022, pg – 179-183
4. **Dr.J Bhuvana, Dr.T.T. Mirnalinee ,Dr. Bharathi B , Jayasooryan S, Lokesh N N**, “YOLOV5 for Stroke Detection and Classification in Table Tennis”, Proceedings of the MediaEval 2021 Workshop, Online, 13-15 December 2021, CEUR workshop proceedings, Vol. 3181, URL: YOLOv5 for Stroke Detection and Classification in Table Tennis (ceur-ws.org), Available: August 2022
5. **Dr.S.Kavitha, Dr.S. Mohanavalli, Dr. Bharathi B, Rahul, C.H., Shailesh, S., Preethi, K.** (2022). Classification of Indian Monument Architecture Styles Using Bi-Level Hybrid Learning Techniques. In: Suma, V., Baig, Z., Kolandapalayam Shanmugam, S., Lorenz, P. (eds) Inventive Systems and Control. Lecture Notes in Networks and Systems, vol 436. Springer, Singapore. [https://doi.org/10.1007/978-981-19-1012-8\\_32](https://doi.org/10.1007/978-981-19-1012-8_32) (Avilable online: 02-08-2022)
6. **Sushaanth Srinivasan, Sharvesh Shankar, Nitheesh Kumar N, Sabarivasan Velayutham, Thejas N, Vikash Anand N, Dr.K. Lekshmi, Dr.B.Prabavathy** have published the paper titled "Automated Classification of Lung Tuberculosis Using 3D Deep Convolutional Neural Networks", in CEUR Workshop Proceedings, Vol. 3180, 2022, pp.1572-1579.
7. **Shreya Sriram, Madhuri Mahalingam, Sarah Aymen Naseer, Shajith Hameed, Rahul Rajagopalan, Sai Shashaank R, Dr.K. Lekshmi, Dr.B.Prabavathy** have published the paper titled "Ensembled Approach for Web Search Result Diversification Using Neural Networks", in CEUR Workshop Proceedings, Vol. 3180, 2022, pp.1580-1589.
8. **Dr.K. Lekshmi, Dr.B.Prabavathy, Yogesh Munees E, Siddharth S, Shrijith Mr, Shrikeshavinee Ramachandran, Shruti Sriram, Ramdhanush Venkatakrishnan** have published the paper titled "A Fusion Approach for Web Search Result Diversification using Machine Learning Algorithms" in CEUR Workshop Proceedings, Vol. 3180, 2022, pp. 1435-1442.

9. **Pravinkrishnan K, Naren Sivakumar, Ainsely Jebaraj, C Padma Pooja, Supraja Sridhar, Dr.K. Lekshmi, Dr.B.Prabavathy** have published the paper titled "Classification of Plant Species Using AlexNet Architecture", in CEUR Workshop Proceedings, Vol. 3180, 2022, pp.2087-2093.
10. **K. Akilan, Anusha Chandrasekaran, Arunesh Kumar, S. B. Jashwaan, A. Joshua, Dr.S. Rajalakshmi, and Ms. S. Angel Deborah** published a paper titled, "Customized Internet of Things-Based Bus Tracking and Management System", J. D. Peter et al. (eds.), Disruptive Technologies for Big Data and Cloud Applications, Lecture Notes in Electrical Engineering 905, pp - 601-611. [https://doi.org/10.1007/978-981-19-2177-3\\_56](https://doi.org/10.1007/978-981-19-2177-3_56)
11. **Sheerin Sitara Noor Mohamed and Dr.S. Kavitha**, "SSN MLRG at ImageCLEF medical Caption 2022: Medical Concept Detection and Caption Prediction using Transfer Learning and Transformer based Learning Approaches", CLEF 2022 – Conference and Labs of the Evaluation Forum, September 5–8, 2022, Bologna, Italy. <http://www.dei.unipd.it/~ferro/CLEF-WN-Drafts/CLEF2022/paper-113.pdf>
12. **Aarthi Nunna, Aravind Kannan Rathinasapabathi , Chirag Bheemaiah P K and Dr.S. Kavitha**, "SSN CSE at ImageCLEFaware 2022: Contextual Job Search Feedback Score based on Photographic Profile using a Random Forest Regression Technique", CLEF 2022 – Conference and Labs of the Evaluation Forum, September 5–8, 2022, Bologna, Italy,. <http://www.dei.unipd.it/~ferro/CLEF-WN-Drafts/CLEF2022/paper-114.pdf>
13. **Dheepak S , Dr.S. Kavitha ASP/CSE and Dr.Raghuraman G**, " SSN MLRG at ImageCLEF 2022 Tuberculosis: Caverns Report using 3D CNN and Uniformizing Techniques", CLEF 2022 – Conference and Labs of the Evaluation Forum, September 5–8, 2022, Bologna, Italy. <http://www.dei.unipd.it/~ferro/CLEF-WN-Drafts/CLEF2022/paper-117.pdf>
14. **Gersome Shimi1, Jerin Mahibha, and Durairaj Thenmozhi** published a paper titled "Sexism Identification In Social Media Using Deep Learning Models" in CEUR (Scopus indexed) - Vol: 3202, pp: exists-paper10:1-7, Aug 2022.
15. **Karun, A., Divyasri, K., Balasundaram, P., & Sella Veluswami, J. R.** (2022). Plant species identification using probability tree approach of deep learning models. Working Notes of CLEF.
16. **Srinath Srinivasan; S G Shivanirudh; Sujay Sathya; T T Mirnalinee**, "Exploring Bayesian Uncertainty Modeling for Book Genre Classification", 2022 IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology (IAICT), 10.1109/IAICT55358.2022.9887417, BALI, Indonesia, IEEE, 16 September 2022, pg – 179-183
17. **A. Vasantha Raman, V. Sanjay Thiruvengadam, J. Santhosh, and Thenmozhi Durairaj** published a paper titled "Real Time Captioning and Notes Making of Online Classes" in Springer IFIP AICT, Vol.654, pp.207-220, Oct 2022.



## FUNDED PROJECTS

1. **Dr. T. Sree Sharmila ASP/IT as PI and Dr. R. Priyadharsini as Co PI** submitted a project proposal titled "Developing an Intelligent System for Material Recognition using Artificial Intelligence and Deep Learning Techniques" to SERB-SURE
2. **Dr. J. Bhuvana as PI, Dr. T.T. Mirnalinee as CO-PI** submitted a project proposal titled, "Artificial Intelligence based Sustainable wildlife surveillance", in DST SERB POWER scheme for budget of Rs.29,04,000 Lakhs for a duration of 36 months. Submitted on 29-09-2022 after scrutiny on 26-09-2022 by Principal, Vice Principal, Dean Research and HOD.
3. **Dr. R. Priyadharsini as PI and Dr. T. Sree Sharmila, Dr. A. Beulah and Dr. J. Sofia Jennifer as Co PIs**, submitted a project proposal titled "Development of a Computationally Intelligent System with Scene Understanding for Environmental Monitoring" to SERB POWER
4. **Dr. B. Bharathi as PI and Dr. J. Bhuvana as Co-PI**, submitted a project proposal titled "Development of code-switching automatic speech recognition for south Indian languages" to DST-Power grant. Duration: 3 years, Amount: Rs. 29,27,100
5. **Dr.S.Mohanavalli as PI and Dr.S.Kavitha as CO PI** submitted a project proposal titled "Design of Cancer Diagnosis System using Federated Learning Framework and XAI" was submitted to SERB-SURE for 26.30 lakhs.
6. **Dr. B. Bharathi** presented the project proposal titled "Real-time multi-dialect automatic speech recognition system for Tamil " to Tamil Virtual Academy on 10-08-2022.
7. **Dr. D. Thenmozhi along with Dr. C. Aravindan and Dr. N. Sripriya** of IT department applied an externally project titled "Cross-Lingual Information Retrieval System to Enhance the Self-learning Capability of Tamil-medium Students using AWS-AI" to Amazon Research Awards with a budget of 18300 USD as Cash funding and 64554 USD as AWS Promotional Credits for the duration of 1 year.
8. **Dr. Mirnalinee TT as PI, Dr. J. Bhuvana and Dr. Bharathi B as Co PI** , submitted a project proposal titled, Early prediction of abnormal activity in real time surveillance videos using Edge Computing, to DST SERB SURE for a budget of Rs. 29,98,600 on 07-10-2022.
9. **Dr. P. Mirunalini as CO-PI along with Dr.C.Aravindan PI and Mr.B.Senthilkumar CO-PI** submitted a project titled "" Development of cloud and mobile based system for digital evaluation of answer scripts using semantic segmentation and deep learning techniques" to SERB-SURE.
10. **Dr.H.Shahul Hamead as PI and Dr.T.T.Mirnalinee as Co-PI** Submitted a project proposal titled "Reducing energy consumption of communication networks at educational institutions by using state-of-the-art green networking techniques" under DST SERB SURE Scheme with a budget of Rs.29.51 Lakh on October 07 2022.



11. **Dr. D. Thenmozhi** presented her project proposal titled "BARF - Blind Abled Reading Frame" to Project Advisory Group on 29th August 2022 at IIT Delhi. This proposal was submitted to DST under TDP scheme.

### **Dr. Thenmozhi's experience**

I submitted a project proposal titled "Blind Abled Reading Frame – BARF" to Department of Science and Technology under Technology Development Program scheme during December 2021. The objective of this project is to develop a voice enabled frame to visually impaired that helps them to recognize objects, text, currency and braille. The project was short-listed and called for a presentation. I presented the same to Program Advisory Committee on 29<sup>th</sup> August, 2022 at IIT-Delhi. A total of 81 teams all over India were participated in the presentation. Among which 27 projects were recommended by the committee. It recommended our project with a financial support of Rs.24 Lakhs for the duration of 3 years. This proposal is an extension of an internally funded student project. We developed a prototype that detects objects, text and Indian currencies. A patent was filed on this product, and it is at TRL-6 level. I like to share that, this helps to get the grant for the project.



## **ACADEMIC COUNCIL MEETING**

**Dr. T. T. Mirnalinee** presented the curriculum and syllabus for PG2022, at the 5th Academic council meeting held on 6.8.2022 at ECE seminar Hall, SSNCE. **Dr. V. Balasubramanian**, Member Academic Council attended the 5th Academic council meeting held on 6.8.2022 at ECE seminar Hall, SSNCE.



## PAPERS REVIEWED

- **Dr. B. Prabavathy** reviewed papers for Oriental Journal for Computer Science and Technology, Computer Modeling in Engineering & Sciences Journal and for ICCSP 2023.
- **Dr. P. Mirunalini** reviewed papers for the journal visual computer and for ICCSP 2023.
- **Dr. K. R. Sarath Chandran** reviewed an article for Displays Journal (Elsevier Publications) and for ICCSP 2023.
- **Dr.S.Saraswathi** reviewed a paper for the journal Intelligent Automation & Soft Computing and a paper for the conference ICCSP 2023.
- **Dr.S.Rajalakshmi** reviewed a papers for Transactions on Asian and Low-Resource Language Information Processing (TALLIP) Journal, IICAIET 2022 conference, 4th International Conference on Machine Learning and Intelligent Systems (MLIS 2022), and SPELLL 2022.
- **Dr.K.Madheswari** reviewed thirty papers for multimedia tools and applications Journal.
- **Dr. J. Suresh** reviewed a journal paper for Neural Computing and Applications Journal.
- **Dr. D. Thenmozhi** reviewed papers for the International Journal of Information Management Data Insights, Cloud Platform for IGI-Global book chapter and for FIRE 2022 conference.
- **Dr. R. Kanchana** reviewed three research papers submitted to the IEEE International Conference on Teaching, Assessment, and Learning for Engineering 2022 to be held in Hong Kong, in Dec 2022 and reviewed a research paper submitted to the Elsevier journal on Smart Agricultural Technology.
- **Dr. D.Venkatavara Prasad** reviewed a paper for International Journal of Environmental and Analytical Chemistry.
- **Dr. B. Bharathi** reviewed papers for Circuits, systems and signal processing journal and Computer, speech and Language journal, ACM Transactions on Asian and Low-Resource Language Information Processing and ICCSP 2023 conference at Department of IT, SSN College of Engineering.
- **Ms. S.Lakshmi Priya** reviewed a paper for the 7th International Conference on Computer, Communication and Signal Processing organized by Sri Sivasubramaniya Nadar College of Engineering, Chennai.

# WORKSHOPS ORGANIZED

## Workshop on Stream Data Management and Analytics in Big Data - Big Stream

The 3 -day workshop on Stream Data Management and Analytics in Big Data - Big Stream 2022 was organized by Dr. R. Kanchana, Dr. Y. V. Lokeswari and Ms. S. Lakshmi Priya during 8-10 Sep 2022 in physical mode. The workshop targets UG, PG students, research scholars of CSE/IT and Industry professionals. The guests invited for the workshop were Mr. Sasikumar Venkatesh, Senior Software Engineer, Walmart, Bangalore, and Mr. Sriganesh Venkataraman, Senior Staff Engineer, Walmart, Bangalore. There were in total 37 (UG – 30, PG- 4, Research Scholars 2, Faculty -1) participants, all from SSN. The workshop aimed at covering the following topics.

- What is stream data
- Generating data streams
- Producing and consuming stream data
- Spark Streaming
- Spark SQL
- Case study: Consuming and generating streaming data from Google Maps.
- Solving real world applications using stream data
- Demos and interactions

Participants were given use cases and projects to be completed in a week time. The proficiency certificate was provided for those who completed the project on or before deadline.

The installation steps for Java JDK, Spark, Kafka were shared to all registered participants in order to complete installation before workshop. The handouts with step-by-step instructions for installation were also shared with all the participants thus making the demo sessions more interactive. Topics covered in workshop are as follows.

### Day 1 (08-Sep-2022)

The workshop started with invocation followed by welcoming and introducing the speakers. The first session was about streaming data. Mr. Sasikumar briefed about the different data sources for extracting the data, architectures, and data patterns. Following this generation of truck information through Stream Data and generating Real time streaming of vehicle data was demonstrated. In the afternoon session, the generation of truck information through stream data was extended to Publish / Subscribe system using consumer, producer, and broker network.



### Day 2 (09-Sep-2022)

On second day Mr. Sasikumar introduced the event streaming and processing using Kafka. The real time processing of data using Kafka event streaming was explained in detail. A Distributed Broker network with Kafka (A Publish / Subscribe System) was introduced with its architecture. The setting of single and multiple brokers with Kafka was demonstrated. Mr. Sriganesh Venkataraman demonstrated how to set up the publish/subscribe system using Kafka with the components Producer, Consumer, Topic List, Zookeeper and Broker. The Spark streaming was introduced along with DStream operations, Delivery Guarantee and Checkpointing.



### Day 3 (10-Sep-2022)

Mr. Sasi Kumar briefed about Apache Spark for distributed processing, RDDs, Transformations and Actions. Further the basic SparkSQL, DStream and Dataframe operations were detailed. Mr. Sasikumar took time to explain about partitioning of data for parallel read and write. The pipelines for executing the program in batch and non-batch modes was briefed. Finally, the Spark Streaming was connected with Apache Kafka for processing of real time data collected from the Google Maps.

The participants were asked to work on the project by streaming the real time data using Spark and Kafka. The participants who submitted the project within the deadline are issued with proficiency certificate. Completed projects were uploaded in GitHub for evaluation.

### Workshop Organizers

## Workshop on Vue JS

Offline workshop on Vue JS was conducted by Dr. B. Prabavathy, Dr. V. S. Felix Enigo and Dr. S. Saraswathi during 13<sup>th</sup> September 2022. The resource persons from Predio are as follows:

- Arvind Muthuraman, Senior Technical Manager (Alumnus 2016 passed out)
- Kokila, Lead Engineer
- Govind, Software Engineer
- Damini, Software Engineer
- Mohan, Software Engineer

The team started the session by asking basic questions about the fundamentals of web development and made sure that everyone in the hall has a basic understanding of how web applications work before jumping into the session. Later, the team conducted a fun CSS game for the participants where they had to guess the correct CSS code for the prompted web design. Then the team introduced VueJS to the participants and explained them the importance of creating components by leveraging the power of VueJS this followed by a hands-on tutorial on how to create a component and use it in the web page. They used an example of a simple e-commerce website to work with it. After that they explained how to retrieve data from an API and use it in the application. They also explained the various life-cycle processes in the VueJS with examples. Finally, they hosted a quiz contest and wrapped up the session.

### Dr. B. Prabavathy ASP/CSE





## Two Days Online National workshop on Edge computing and its applications

The department of CSE has organised a Two Day Online National workshop on 'Edge computing and its applications' during August 26 and 27, 2022 coordinated by Dr. T.T. Mirnalinee, Dr. J. Bhuvana and Dr. B. Bharathi. 39 participants, out of which 18 were faculty, 15 research scholars and 6 students from various institutions across Tamil Nadu have attended the workshop. A team of resource persons from Siemens, Bengaluru has taken the six sessions of the workshop. The first day of the workshop started with the welcome and inaugural address by Dr. T.T. Mirnalinee, Professor and Head, Department of CSE, followed by the first session on Introduction to Edge computing, by Mr. Abhinandan Bhadauria, Area Architects, Siemens Industrial Edge. The second session was on Programming models and toolkits for edge computing by Mr. Kaushik Nandy, Team Architect, Industrial Edge, Siemens. The last session was on Edge computing infrastructure and edge-enabled applications by Mr. Manoj Jha, Team Architect, Industrial Edge Apps Team, Siemens.

The second day of sessions started with Monitoring, management, and diagnosis in edge computing by Mr. Gurumurthy GS, Senior Software-Test Specialist, Industrial Edge, Siemens, followed by Security and privacy in edge computing by Mr. Rajan Jha, Product Owner, Siemens Technology India, and Algorithms for machine learning and AI at the edge by Mr. Nikhil Goyal, Data Scientist, Edge Apps of Industrial Edge Siemens, Bengaluru. The workshop was well received by the participants and the feedback received were welcoming.

**Dr. J. Bhuvana/ ASP, CSE**



## Workshop on Developing IoT based Applications

The department of CSE organized a one-day workshop on “Developing IoT applications” on 18<sup>th</sup> Oct 2022. The resource person is S. Suresh and his team from VI Microsystems, Chennai primarily to train the lab technicians of CSE. Along with the lab assistants, ME (CSE) I year students and faculty members attended the workshop.

There was a demo of experiments using

- a) Arduino uno / Raspberry pi 4
- b) ESP 32 (IoT)
- c) Siemens IoT2040 Development kit.

The following experiments were demonstrated.

1. To control the input and output port line of IoT2040 using python program
2. Analog Sensors Interfacing to 2040 kit (IoT 2040 development kit) using python and plot the data in web interface.
3. Interfacing RS232 communication with IoT2040 using python
4. Interfacing RS485 communication with IoT2040 using python
5. Controlling lamp and buzzer (On board IoT2040kit) using web interface
6. Sending sensors data to ThingSpeak cloud
7. To control the input and output port line of IoT2040 using python program
8. Analog Sensors Interfacing to 2040 kit (IoT 2040 development kit) using python and plot the data in web interface.
9. Interfacing RS232 communication with IoT2040 using python
10. Interfacing RS485 communication with IoT2040 using python
11. Controlling lamp and buzzer (On board IoT2040kit) using web interface
12. Sending sensors data to ThingSpeak cloud

Further, in the afternoon session, there was a demo of different IoT applications using only Arduino uno / Raspberry pi 4 with manual connections.

Organized by Dr. R. Kanchana and Dr. T. T. Mirnalinee



## SEMINAR / WORKSHOPS ATTENDED

1. **Dr. A.Chamundeswari** participated in DST-SERB karyashala workshop and SNCI satellite meeting on "Scientific interventional tools to improve cognitive behaviour in children with neurodevelopmental disorders in India", organized by dept of Biomedical Engineering, NEHU, Shillong, Meghalaya, India, from 19th to 24th Sep 2022.
2. **Dr.V.S.Felix Enigo** has attended a Two Days National workshop on "Edge computing and its applications" conducted on 26th & 27th August 2022 by the Department of CSE, SSNCE.
3. **Dr. V. Balasubramanian** attended GDSC (Google Developer Student Club) India Virtual Faculty Summit on 6.10.22 at 5.00 PM to 6.30PM.
4. **Dr. Chitra Babu** attended the ACM India Industry webinar by Dr. Mayur Datar, Senior Vice President and Chief Data Science Officer, FlipKart on the topic "Onboarding the Next 500 Million Indians: Applied Innovation in Machine Translation" on 27th August 2022. It was attended by over 170 people across the country.

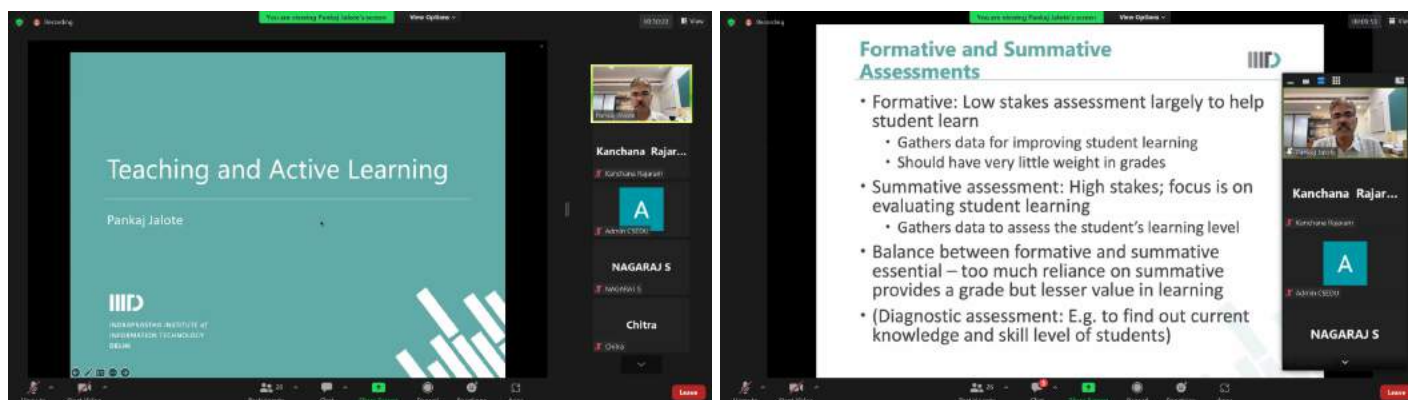
### Effective Teaching Techniques

Dr. R. Kanchana attended a two-week module / workshop on "Effective Teaching Techniques" taught by Prof. Pankaj Jalote, IIIT, Delhi during 10-19 Oct 2022.

To be an effective teacher for a course on a subject in higher education, the teacher needs two types of skills: subject matter expertise and understanding of effective teaching practices. The aim of this module is to help faculty who have decent subject matter expertise to become effective teachers.

The module focuses on general pedagogy techniques for effective teaching. The module covered the following topics:

- Teaching and learning process and what facilitates learning
- Course Planning with Learning Outcomes
- Active Learning, peer learning, flipped classroom, etc.
- Assessment - different types
- Student Motivation and what can be done to enhance it, etc.





## OTHER ACTIVITIES

1. **Dr. B. Bharathi** served as an external expert member for the oral examination for NPTEL course on 21-09-2022 at Department of Electronics and Communication Engineering, Sri Venkateswara College of Engineering, Chennai.
2. **Dr.P. Mirunalini** served as an external expert member for the oral examination for NPTEL course on 21-09-2022 at Department of Electronics and Communication Engineering, Sri Venkateswara College of Engineering, Chennai."
3. **Dr. D. Thenmozhi** served as an external expert member for the oral examination for NPTEL course on 21-09-2022 at Department of Electronics and Communication Engineering, Sri Venkateswara College of Engineering, Chennai.
4. **Dr. R. Kanchana** conducted counselling meeting for two of the ME CSE admission seeking candidates and clarified their doubts on 13th Sep 2022 and on 20th Sep 2022
5. **Dr. R. Kanchana** conducted counselling meeting for seven of the ME CSE admission seeking candidates and clarified their doubts on 6th Aug 2022 and on 25th Aug 2022
6. **Dr. B. Prabavathy** coordinated and successfully completed the Supplementary course in C Programming with our students Karthik.D and Nivedhitha D. The course spanned for 14 hours (from 12th May 2022 - 14th September 2022) and got completed with a Capstone project
7. **Dr. S. Kavitha** completed the Summer Internship for Bharathiraja. S. from Dhanalakshmi Srinivasan Engineering College from 17.08.2022 to 10.09.2022, review held on 14.09.2022.
8. Online interview was conducted on 15th to 16th September towards teaching assessment for faculty position at CSE dept. A seven member panel shortlisted 12 applicants among 30 candidates.
9. **Dr. D V V Prasad and Dr.A.Chamundeswari** evaluated the presentation of CSE research scholars on SSN Doctorate Scholars Day, 7 September 2022
10. As part of I-Cell, **Dr. H. Shahul Hamead** organized a talk on "Startup Opportunities" on 23/09/22. The talk was delivered by an SSN alumini Mohanasunder, Co-founder of Coinbooks, an accounting software Start-up.
11. **Dr. T. T. Mirnalinee** attended the Program on Launching of State Universities Research Excellence (SERB-SURE) to seed R&D opportunities, through competitive support, for state university faculty to strengthen research capabilities.
12. **Dr. B. Prabavathy** has attended a live streaming for launch event of SERB-SURE on 03.08.2022
13. **Dr. Chitra Babu** was a member of one of the interview panels for the SSN CE management quota admission for the year 2022 that was held on 24th, 25th and 26th August 2022.

14. **Dr. D.Venkatavara Prasad** was a member of one of the interview panels for the SSN CE management quota admission for the year 2022 that was held on 24th, 25th and 26th August 2022.
15. **Dr. T. T. Mirnalinee** was a member of one of the interview panels for the SSN CE management quota admission for the year 2022 that was held on 24th, 25th and 26th August 2022
16. **Dr.T. T. Mirnalinee along with Dr. A. Chamundeewari** attended the IFP progress review meeting on 2nd August.
17. **Dr. D. Thenmozhi** organized Anthakshari event as part of Teachers day out on 24th September 2022.
18. **Dr. D. Thenmozhi** attended an IQAC meeting virtually on 31st October, 2022.

## ACADEMIC AUDIT

Academic audit was conducted in the department of CSE by the external expert Dr. S. Sendhilkumar from Anna University, Chennai on 23rd September, 2022.



# TEACHER'S DAY CELEBRATION

## Antakshari

Dr. D. Thenmozhi ASP/CSE organized Antakshari event as part of Teachers day cultural event on 17th August 2022. Dr. Chitra Babu Prof/CSE along with Mr. A. Balasubramanian, EEE and Dr. K. Babu, Department of Mechanical Engineering won the third prize in the Antakshari event that was organized as a part of the Teachers' day cultural on 17th August 2022.

## Sing a Song

Dr. D. Thenmozhi ASP/CSE organized Sing a Song event as part of Teachers day cultural on 23rd August 2022. Dr. Chitra Babu and Dr. B. Prabavathy participated in the Sing a Song event that was organized as part of the Teachers' day cultural on 23rd August 2022.

## Cooking without Fire

Dr. Chitra Babu Prof/CSE served as one of the judges for the event "Cooking without Fire" event that was organized as a part of the Teachers' day cultural on 19th August 2022.

## Best Faculty Awards

Dr. D. Thenmozhi and Dr. B. Bharathi received the First and Second Prizes respectively for the Best Faculty CSE (AY 2020 - 2021).



# ME(CSE) ORIENTATION - 2022-2024 BATCH

The orientation for ME(CSE) I year students was organized on the reopening day of 14<sup>th</sup> Oct 2022. 14 students have joined this batch. The faculty members handling classes for ME I year students attended the session and addressed the students as given below:

- Welcome address
- Self-Introduction of the students
- General guidelines (Infrastructure, Labs, discipline, attendance, Internships, NPTEL, Value added courses, IFP) – Dr. T.T. Mirnalinee, Prof. and HoD
- OBE, Motivational Talk – Dr. Chitra Babu, Prof., CSE
- Curriculum and Assessment – Dr. R. Kanchana, Assoc. Prof., CSE
- Research groups – Dr. S. Kavitha, Assoc. Prof., CSE
- Coding Club, CyberSecurity Club – Dr. V. Balasubramanian, Assoc. Prof., CSE

The presentation was collated by the class teacher Dr. R. Priyadarshini. The session was coordinated by Dr. R. Kanchana.





## BE(CSE) 2nd YEAR ORIENTATION

The Orientation program for second year CSE was conducted on 6<sup>th</sup> October, 2022 for the batch 2021-2025. The HoD CSE, Dr. T. T.Mirnalinee delivered a welcome address and a brief was given about the different opportunities provided by the department, various research groups, professional societies and placements. The faculty-in-charges of various portfolios gave a brief to the students. Dr.R.Kanchana elaborated about the curriculum, Dr.B.Bharathi explained about the academic project and its process. The opportunities for internships were detailed by Dr. A.Chamundeswari. And Dr.J.Suresh gave a quick glimpse on the NPTEL, VAC and about the course waive off procedure. Dr.R. Rajalakshmi explained about the student internal funding opportunity of SSN. Dr. K. Madheswari briefed on SIH. And Dr.B.Prabavathy described about higher studies. Finally, the meeting ended with a happy note.

**WE WELCOME THE NEXT NEW BATCH**

**Dr. S. V. Jansi Rani**

**MCC Chairman/ Second Year CSE**



# MICROSERVICES AND DEVOPS

Dr. Baskaran J, Cloud Practice Head, Tata Consultancy Services, organized a one-day guest lecture on Microservices and DevOps on October 15, 2022. Dr. R. Kanchana and Dr. K. Lekshmi, professors in the Department of computer science, coordinated the lecture. With more than 24 years of experience in the IT sector, Dr. Baskaran J has held a variety of positions, including delivery head, programme manager, practise leader, chief architect, and project manager. He split the discussion into two sections. Microservices formed the basis of the first section. He described the business domain's monolithic design. He provided a thorough explanation of the microservices architecture's capabilities, benefits, and drawbacks. He provided in-the-moment examples to keep the discussion engaging. He discussed the utilization of microservices by online retailers like Amazon. Then he discussed tools like Redis and Kubernetes that make the construction of microservices easier.

The second section covered devOps. He gave an explanation of what devOps is, how it works, and its concepts. He also discussed CI/CD (Continuous Integration and Continuous Deployment), one of the greatest DevOps strategies. Jira, Confluence, and other devOps technologies were used as examples. He also discussed the difficulties in putting these technologies into practice. The talk inspired the students to learn more about these new technologies and assisted them in grasping the fundamental ideas. A QA session was held at the end to address any questions the students may have had on tech-related topics. He focused his speech on crucial topics that interviewers might bring up. The seminar helped the participants by exploring other career paths.



**Sarika Esackimuthu**

**III Yr CSE**



# ENTREPRENEURSHIP

## - From A Student's Perspective

Tushar Shah, Final year BE student gave a talk on Entrepreneurship- From a student's perspective to the BE third year students on 30th Sep 2022 under the aegis of i-Cell.

The abstract of the talk is as follows:

- Entrepreneurship is the ideal way for students to learn, grow and build a solid base for the brightest future.
- The speech would be mainly to understand how students from SSN can start their entrepreneurial journey and balance college life while taking on the challenges and burdens of entrepreneurship.

A few things that will be discussed are:

- The formal process to start as an entrepreneur
- The mindset and temperament needed to be an entrepreneur.
- Identification of opportunities that lie around us.
- The attitude required to balance work and other aspects of life.

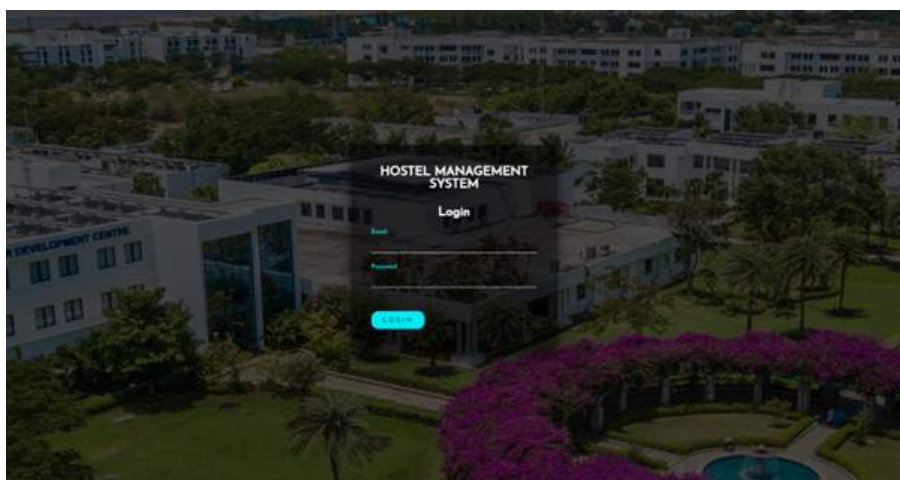


# SSN IIC FIELD VISIT AND APPLICATION DEVELOPMENT

Our final year students Jayaraja S.K., Jayakrishnan S.V, Hemanant S 1, Karthik A have developed the hostel outpass management software, which is about to be launched soon.

In today's modern world, although a lot of things have been modernized/digitalized, still most of the activities carried out by the students at hostel and mess involves either lot of paperwork or must spend a lot of time waiting in a long queue. To overcome this situation, a Web Application has been developed using Node.js and React.js and has been deployed in SSN's public network (<http://10.1.7.55:8081>)

Demo Video: <https://www.youtube.com/watch?v=t8Vm8UkGx3g>



# STUDENT ACHIEVEMENTS

## Placement Updates

The placement season this year started with a bang. The students of the department bagged hefty salaries from reputable companies.

Company		Salary	Number of Students Placed
	Fidelity	Rs. 1293000	8
	Google	Rs. 3000000	3
	KLA Tencor	Rs. 1800000	1
	CITI Bank	Rs. 1375000	2
	Avalara	Rs. 3100000	1
	ZebPay	Rs. 1200000	1
	LYNK LOGISTICS	Rs. 1000000	2
	Mr.Cooper	Rs. 1000000	2



McKinsey &amp; Company

Rs. 1200000

3



Maxlinear

Rs. 1424820

2



Natwest Group

Rs. 1300000

1



Nielsen

Rs. 1188000

2



Chargebee

Rs. 2100000

3



Cognizant

Rs. 400000

27



Genpact

Rs. 1000000

1



Tekion

Rs. 1100000

2



Virtusa

Rs. 700000

1



Everstage

Rs. 1480000

2



Sify

Rs. 650000

5



Nokia

Rs. 820000

3

**Deloitte.**

Deloitte

Rs. 760000

1



Informatica

Informatica

Rs. 2100000

4

Transunion

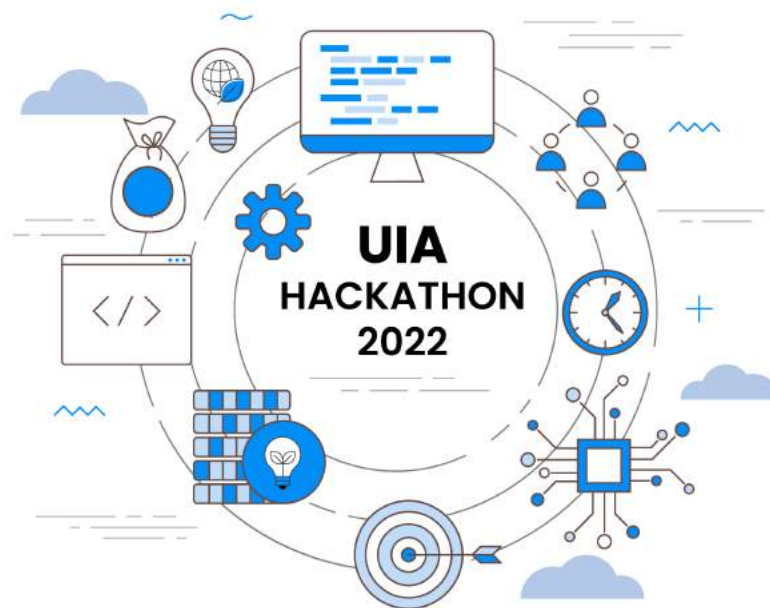
Rs. 800000

1

We wish the budding computer science engineers the best of luck and hope that they will serve as inspirations for all eventual graduates of our department!

## UNESCO-India-Africa (UIA) Hackathon

**Vignesh Balaji S** of III year CSE has been shortlisted for UNESCO-India-Africa (UIA) Hackathon conducted by Ministry of Education's Innovation Cell (MIC) and the All India Council for Technical Education (AICTE). The UIA Hackathon will be conducted from 22nd November 2022 to 25th November 2022 at Gautam Buddha University, Greater Noida.



## SIH 2022

### Team ByeWorld

The Smart India Hackathon 2022 was a tremendous success on so many levels- breaking records in participation, scale, and logistics.

More than 80 teams participated in the SSN internal Hackathon held on 23<sup>rd</sup> March 2022. Our team placed first in the internal Hackathon. The shortlisted teams were called for the second phase of the Hackathon in 75 cities across the country conducted by each of the ministries who had given the problem statements at several different nodal centres.

This gave our team (ByeWorld) even more pride in competing for the Title with other teams from various universities, across the country.

Over 15000 students participated in the Grand finale held on 25<sup>th</sup> and 26<sup>th</sup> August 2022 - each with a unique and innovative solution to the problems faced by our nation.

It was indeed a great feeling to watch the youth of our nation work hard to contribute to the nation's development in any small as way as possible. The thrill of non-stop 36 hours of coding, mentoring, and judging was invigorating; the timely mentoring sessions offered by experts in various fields helped us throughout the challenge. Judges from the industry and ministry visited at spaced intervals, validating, and evaluating the solutions.

There was even a live video conference with Honourable Prime Minister, Narendra Modi, who talked about importance of passion towards achieving goals. It was truly surprising to hear the PM talk about current trends in tech like IOT, Augmented Reality and Machine Learning.

Our project converted a simple projector system into a smart interactive board, using only the video feed from a smart phone, without any embedded tech. We achieved this using various Machine Learning techniques such as hand detection and voice recognition. We were keen on making our system functional, intuitive, and cost effective. All-in- all, the product accumulated a lot of appreciation, insights as well as critical reviews from all the judges and mentors, as well other college students. This problem was given by Ministry of Education: National Digital Education Architecture (NDEAR) & Department of School Education and Literacy (DoSEL).





(From left to right): Mentor: Dr. V. Balasubramanian (CSE) , Members: Sumon Kumar, D. Shruthi, S. Supraja, Vignesh Balaji S, Shri Keshavinee, N. Thejas, CSE 3<sup>rd</sup> Year

The organizers must be congratulated for their efforts, through which, the entire experience was made comfortable and memorable.

After the presentations, the judges convened to decide the winners. Following this, the valedictory function took place where the results were announced. It was a great delight to receive the prize Rs.1,00,000/- after all the hours of hard work. Overall, it was a wonderful experience where we learnt industry insights and problem-solving skills.

## Team Kyogre

Our team — Kyogre — was shortlisted to contest in the Software Edition of Smart India Hackathon, 2022. The finale, an intensive 36-hour hackathon, was held at Chandigarh Group of Colleges, Chandigarh on the 25th and 26th of August, 2022. Our team of six — Karthik D, Anirudh A, Karthik Raja A, Nivedhitha D, Dhanalakshmi M and Aravind Kannan R — worked in collaboration with the Underwater Acoustic Research Laboratory (UWARL), SSNCE, under the mentorship of Dr. Sakthivel Murugan S from the ECE department, and Mr. Abhishek P from HCL Technologies.

The team worked to address the Indian Meteorology Department's (IMD) need to analyze land-cover distribution: for instance, to help them set up meteorological detection and weather

monitoring stations that are cautiously isolated from residential zones, among other usage scenarios. We proposed a software system, namely “*SatVision*”, that aimed to achieve detection of non-residential built-up area clusters through AI-driven analysis of Medium Resolution Satellite Imagery. In a systematic approach to developing *SatVision*, we sought to prepare annotated datasets from raw, noisy and unprocessed satellite imagery collected by NASA, ESA and ISRO; utilize existing annotated datasets to support model building; and train Deep Neural Networks to detect, segment and identify clusters of non-residential built-up regions. Our end-to-end system was evaluated on satellite data of highly-populated regions like Mumbai, Kolkata, Bangalore and Delhi that pose a complex topography to detect patterns, and nonetheless, produced promising results.

Through a series of rigorous reviews spread across the two days, our team was able to exhibit striking progress, incorporating previous comments and suggestions at each level of scrutiny, whilst incrementally building the proposed software system, *SatVision*. Perhaps the most notable challenge we met in developing the solution was in achieving a high accuracy land-cover detection system that could be deployed in real-time, and could adapt to newer regions with limited training data. *SatVision* was, therefore, built to perform fast inference on the fly, through a carefully augmented lightweight neural architecture, an adaptive training mechanism, and a novel patch-based processing algorithm that optimally pipelines the processing stages. This backend logic, coupled with a user-friendly and intuitive web-interface that presented land-cover demarcation and geographic statistics for satellite data drawn in real-time, placed our team in a conspicuously good standing amidst our competitors.



During the event, the team had the chance to interact with esteemed guests including expert professors and technologists in the field. We were given the opportunity to present summaries of our



work through press media, and subsequently on print and media interviews as well. In an exciting continuum of 36-hours, the team tackled multiple challenges in developing and iteratively refining *SatVision* to meet the requirements of IMD. Notably, we made a great deal of progress in the early hours of day-2, when the team was working relentlessly after a rather critical review, to refine all the independent components accordingly, and to put them accordingly in place: arguably the defining hours of *SatVision*'s effectiveness. Indeed, a great deal of effort, hard-work and resourcefulness most of all, went into emerging as winners of SIH'22!

We express our sincere gratitude to SSN College of Engineering for the opportunity and facilitations they provided for their teams to contest in the hackathon, and to our mentors for their incontrovertible wisdom and expert guidance throughout. Our solution and related details can be found here: <https://github.com/SIH-22-Kyogre>

**Karthik D**

**IV-A**

## Team Intecoders

Our team had to visit our nodal center GMRIT, Razam near Visakhapatnam for a 36 hours final hackathon round. We were welcomed by the SIH volunteers from GMRIT and were provided with hostel stay for 2 days. Day-1 started at 9 am with Prof. Anil D. Sahasrabudhe, Chairman, AICTE addressing and welcoming all the finalists followed by Dr. Anand Deshpande, Founder & Chairman of Persistent Systems along with Hon'ble Education Minister , Shri. Dharmendra Pradhan. The inauguration ended with Prof. MP Poornia, Vice Chariman, AICTE wishing us our best efforts for the event.

Along with the hour of excitement the coding began at 10 am with all teams discussing among themselves trying to bring their product alive. We had small refreshments in between as well. Every team had two rounds of evaluation along with improvements and advice as applicable from the judges. From 7 pm to 8 pm we had our first review. After the first review, the Prime Minister of India Shri Narendra Modi addressed all the participants throughout the nation in an online meet spreading awareness of the program and the benefits for the students. After the dinner we had to code for the entire night with the volunteers occasionally helping us with refreshments.

Day-2 started with the second round of evaluation and mentoring session for each team. Each and every team received a power mentoring at the end before the final assessment. The Final round of evaluation was conducted between 3pm to 5pm and the valedictory started around 8pm.

We were thankful to SSN college of Engineering for allowing us to participate in such an event as all the necessary arrangements like T-Shirts and Standee were made available with ease. The entire SIH experience was very smooth and very much educational. It was a great experience to learn and interact with all other finalists around us. SIH is a nationally recognized and promoted event with great prize awards. All finalists were highly respected and given the necessary means to bring out an idea that could improve the small issue out there in the entire ocean. Winning or losing here didn't matter as it is in the midst of the storm are the moments that truly mattered.

**Team Details****Samyuktha Ganeshkumar****Subha R****Sanmathi P Krupa Elizabeth****Thannickal****Chalini P****Venkat Narayan T R****Dr. A. Beulah (Mentor)****Ms. S. Angel Deborah (Mentor)**

## EMIDS HACKATHON

EMIDS is a leader in digital engineering and transformation solutions for the healthcare and life sciences industries. SSN ACM and ACE in association with EMIDS organised an invigorating 48-hour hackathon, open to all departments across SSN and SNU for all years. The inauguration ceremony was held on October 10 in the CSE seminar hall. Mr. Harish from EMIDS visited the campus and talked to the participants about the 19 problem statements. The participants also interacted and listened to key executives from the company over an online meeting during the ceremony.

Over the period of 48 hours from October 10 to 12, there were multiple open house sessions for the participants to update their status. The participants had to submit a proposed solution document along with the GitHub repo for their prototype or a video about their solution at the end of the hackathon. We received 10 submissions and it is currently under evaluation by the company. A valedictory ceremony will shortly be held to distribute prizes to the winners.



# CODING COMPETITIONS

## Google Developer Student Clubs

A few weeks ago, the SSN GDSC team organized a html coding competition called "HTML > CSS > GO!" with a prize pool of 3k INR. Our task was to create a webpage based on the given screenshot within 60 minutes. The given screenshot was a twitch-like website of a football match with a navbar, playing screen, invite popups and buttons to share & subscribe. We were also given a screen recording to recreate CSS animations for bonus points. All the image assets were provided to us in a zip file.

I started out by creating the basic layout for the webpage using the concept of flexbox, the viewport was divided into navbar, main playing screen, control area beneath it, & finally the popups container to the right side. I then started writing code for the playing screen using the given assets and then created the control buttons. Some of these elements had gradients and shadows involved, & I implemented them using the appropriate CSS properties. Then, I moved on to the popups part and carefully aligned the text and images.

Unfortunately, I did not have time to fully complete the navbar nor the animations. Yet, I had a nice experience participating in this competition and it felt good to get ranked 2nd.



**Cyril Melvin Vincet, III- CSE**

## International Collegiate programming contest (ICPC)

A team from our college, consisting of Joseph Amirtharaj, final year CSE, Anirudh TN, final year CSE and Avinash Kartik, batch of 2022, CSE took part in ICPC - International Collegiate programming contest, also known as the Olympics of coding held during October 7, 2022 — October 8, 2022. The team took part in the prelims which was conducted online and qualified for the Asia West region in the Amritapuri regionals. The team went to Bangalore to take part in the contest and solved 7/10 problems and placed 11th among 8000 teams across the Asia West region and received recognition from the hosts at Amritapuri as well as the other problem setters. We would like to thank the department and our mentor/coach, Dr. V Balasubramanian without whose constant support this global rank would not have been possible.



**Joseph Amirtharaj, IV Year CSE**



We(Deepak Sriram, Harshavardhan, and Kiranraj) are extremely elated to have participated, the 2021 ICPC Asia Gwalior-Pune Regional Contest under the guidance of our coach Mr. Balasubramanian V. The ICPC - International Collegiate Programming Contest, well known as the Olympics of Competitive Programming is a great learning opportunity and experience in itself for programmers. This was our first offline competition at the national level. We had an amazing experience attempting the 5 hours-long contest with interesting problems. The practice we had put in over the years came to our help during the contest. We thank our senior friends of Coding Club for mentoring us and leading us to the world of competitive programming. We express our sincere gratitude to SSN College of Engineering for providing us with a platform to explore ourselves.

**Deepak Sriram**

## Compose Camp

An event called Compose Camp was organized by the App Development Team of the Google Developer Student Club-SSN and the SSN Coding Club. The objective of this event was using the new UI tool Jetpack Compose to create Android apps. Many students were benefited by this camp in developing and applying their design abilities while they built the apps. One online session and two practical workshops totaling four hours made up this three-day course. On their first day, participants learned the fundamentals of Kotlin and Jetpack compose as well as how to set up Android Studio to create Android apps.



Participants in the two-day hands-on sessions built an app that incorporates the fundamental ideas covered in class, such as standard layouts, scrollable layouts, and navigation. Around 50 people attended the online meet on the first day of the camp, and about 40 people attended on the second day. On the Discord server in our college, we shared with them all the materials we made and utilized. The camp's facilitator was 3rd CSE student V. Indirakanth. The participant feedback was great and genuine.



**V. Indirakanth**

**III year CSE**

## GeeksForGeeks Contest

The SSN Coding Club hosted a contest called 'Pickle Rickle', in the well renowned GeeksForGeeks platform. This contest was a national programming competitive programming contest, where the participants were tested on their abilities and skill sets with data structures and algorithms as well as logical and cognitive thinking. The contest was hosted from 7pm to 9pm on the 10th of September, 2022.

The event had a prize pool of Rs. 10,000 + goodies worth Rs. 15000.

The event was a massive success with 1200+ participants spanning across the country. The top 3 prize winners were from Jadavpur University, Kolkata, IIT Roorkee, and Adhi College of Technology.

## Chatbot Using Machine Learning

The coding club is hosting a series of sessions on machine learning about how to build a chatbot using machine learning. On October 31, 2022, the Coding Club hosted its 2nd event of the series where the students were further educated on the NLP pipeline. The event was a success and the students learnt how to further their knowledge on the concepts and the implementation of the chatbot.

## SPORTS ACHIEVEMENT



My team and I got the chance to participate at the Inter Engineering College State level Table Tennis tournament conducted by Sairam College of Engineering on the 29th of September 2022. It was an enriching experience filled with moments of fun, extensive preparation, hard work and determination. Amongst the stiff competition from the other colleges that participated, we proved our mettle and won the tournament, securing first place.

It was an amazing experience for me where I got the opportunity to meet and connect with varied teams across the state. Close to teams had participated and every team performed well. It was a proud moment for me to represent my college in such a prestigious tournament.

**V.S. Sathvika-II year CSE**



# TRENDS IN GAMING AND ADVERTISING

Perpetuating their esteemed succession of alumni speakers, the SSN ACM and ACM-W student chapters organized a webinar on the ‘Trends in Gaming and Advertising’ with a special focus on ‘building high scale backend systems’.

The speaker, Mr. Saravanan Mariappan, the Director of Engineering at Activision Blizzard Media, and an alumnus of our prestigious institution graduating in the batch of 2006, disseminated his expertful insights on contemporary gaming and advertising trends. He led off the session with an audience poll on ‘menti.com’ on the various mobile games played by them. He then went on to speak about his work with the King Studios sector of the company and the huge economy a game has the ability to generate, be it truly successful in the market. The participants were then asked to share their motivation behind playing games, as a precursor to an analysis on the target age groups, top genres of games and the finances generated by the various interests. Mr. Saravanan continued with an examination of the revenues generated by a company through advertising. He cited examples such as Google, Youtube & Amazon to give an insight into the huge rewards of advertising. He also talked about the dominant acquisitions and collaborations in the gaming world made to face a slowness/softening in the global market.

He also shared his technical knowledge with the participants, about building robust scalable backends for state-of-the-art web services. Mr. Saravanan spoke about the various operations involved in the publishing unit of game development from studio to analytics. He went on to summarize the various challenges involved in streaming computationally expensive, multiplayer games online such as device and browser limitations. An analysis of the various approaches by companies towards the concept of metaverse and virtual reality was discussed as well. The session was concluded with a discussion on the road uphill for advertising, such as target-specific ads and incorporation of a rewarded format that encourages users to view the advertisements.

The webinar was a truly insightful and interesting session, complete with engaging audience polls and diagrammatic presentations of statistical analysis. Discussion of the various trends in the gaming and advertising world by an experienced professional from the industry truly proved to be a wonderful and fulfilling learning experience for each and every one of the participants.



**SriVarsha Elangovan**  
**Final Year CSE**

## **MITACS GLOBALINK RESEARCH INTERNSHIP**

I am pleased to be reflecting back on the 12-week MITACS Globalink Research Internship that I pursued under Dr.Mohammad Keyhani at the University of Calgary in Canada over the past couple of months. The research internship, as a whole, was an exciting opportunity to begin with and I am nothing but grateful for getting an opportunity to be a part of such an enriching and fulfilling experience. I am amazed by the amount of growth I have seen in myself as a person over the duration of the internship.

I had the opportunity to work on multiple research projects which were based on subject matters that included Web-Scraping, Data Visualisation, Machine Learning, Software Utility Tools, Text Parsing & Processing, and many more. Over the course of my internship, I was exposed to a lot of contemporary tech stacks in place and had the chance to not only learn but also work with them along with this I had the chance to witness a totally different learning and work culture which was more emphasized on the pragmatic learning and in general had a more holistic approach. The support to work-life balance by not only the employers but also the study places was something that was truly pleasant. Since the internship had students coming in from different parts of the world, I had the opportunity to interact and network with a lot of interesting people which included co-workers, interns from various other streams, professors, Ph.D. Mentors, and many more.

MITACS is a non-profit organization that partners up with Canadian universities to offer fully-funded internships to around 500 students every year from more than 20 different countries. Overall, the globalink research internship was a unique experience that taught me a lot of things that go beyond academic bounds and definitely helped me shape my intentions with respect to my career goals and aspirations.

**Saisrinath H N**

**IV Year CSE**

MITACS Globalink Research Internship is a program which helps undergraduate students conduct research in Canada. I had the wonderful opportunity to go to York University in Toronto and work under Professor Christo El Morr from August to October. The project was on the topic of Gender Based Violence (GVB) and creating artificial intelligence (AI) tools to allow physicians to perform smart screening for GBV. To predict the risk of individuals subject to GVB re-entering the cycle of violence. I also contributed to a project on Mental Health: Machine Learning approaches to predict Depression, Stress and Anxiety levels in individuals.

The internship was very enriching and gave me a new perspective on how to conduct research and take into account the different stakeholders. I undertook a course on Research Ethics and learnt ethical conduct with respect to research involving humans. The program encourages networking with Professors and fellow interns from multiple countries. They gave me a unique insight into their varied experiences and taught me the importance of work-life balance. MITACS provides a generous stipend which covers travel, accommodation, and weekly expenditure.

This internship immensely contributed to my overall development as a person and it pushed me to be better and more efficient. This 12-week program is an incredible opportunity to learn, expand your horizons and experience the culture of a very vibrant country.

**Madhuri Mahalingam**

**IV Yr CSE A**

## ALUMNI CORNER

This period, the department had many alumni visitors from Stratostreet, Barclays, Focus Edumatics, Archimedis Digital, RedBlackTree, Amazon Chennai, Google Bangalore, MotorQ Chennai, Activision Blizzaed USA, Citi Chennai to interact with our faculty. **Swetha Machanavajhala of 2004-2008 batch is one of our notable visitors from Microsoft, Seattle, USA**

**Swetha Machanavajhala writes....**

It has been more than a decade since I graduated from SSNCE. I was visiting India after 4 years (delays due to pandemic) and this time, I decided to visit the SSN campus and faculty. On entering SSN, I was confused seeing the Shiv Nadar University board and almost thought of going back. It's only when I moved a bit forward on the road, did I find the relevant name of SSNCE and was relieved that the college is still there :)

The time when I studied, SSN was a very simple campus with no trees. Going inside the campus took me by surprise, it's now sprawling green with a lot of trees and more importantly so much shade! There's a clock tower, cricket ground, and other sports complexes that adds to the beauty of the campus.



**From Left to Right: Dr. Chitra Babu, Ms. Swetha Machanavajhala, Dr. P. Mirunalini**

The main entrance leading to the fountain was the same and that helped me navigate easily to CSE department via the ECE department. Earlier the pathways outside the back of CSE dept used to be all sand and we used to experience sandstorms in case of high winds. Now, it's replaced by concrete pathways with more trees and shade!

I wondered if I would recognize my professors' faces and if they would recognize me. I was relieved when I found P. Mirunalini ma'am, Chitra ma'am, Balasubramanian sir, Kavitha ma'am, Chamundeswari ma'am, Aravindan sir and Singaravadivelu sir. They all are the same and I was glad I could recognize them. I had great interactions with all of them, talking about my industrial experiences, their courses, and it was fun trying to recollect the vague experiences of my batch (it has been so long!). I am thankful to Balasubramanian sir for showing me and my parents around the campus and talking about the current curriculum and status over a cup of tea. There have been so many changes (for the better) since I graduated, and SSN is doing great work in keeping up with current trends to help students perform well in today's world. He also spoke about alumni accomplishments and I felt very proud hearing how well SSN alumni are doing. He also talked about how the 2002 batch met in SSN for their 20<sup>th</sup> anniversary and suggested the 2008 batch also plan to have a get-together when we reach our 20th year anniversary.

Having studied as a day scholar and traveled daily by college bus for 40km, I knew I had to leave the campus before all college buses started and clogged the roads :) While leaving the campus, I felt very happy seeing my alma mater improving a lot since inception in 1998 and am proud to be an SSNite. To the alumni, I encourage you to visit the campus and faculty if you haven't visited in a while.



## ART CORNER



**Gayathri E**  
**Final year, CSE**

## **EDITORIAL TEAM**

### **FACULTY EDITORS**

**Dr. T. T. Mirnalinee**

Professor & Head/CSE

**Dr. A. Beulah**

AP/CSE

**Ms. S. Angel Deborah**

AP/CSE

### **STUDENT EDITORS**

**Adithya Muthukumar**

**Pooja Premnath**

II Year