

SMRITI

Department of
Computer Science and Engineering

VOLUME : 12 ISSUE : 4



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EDITORIAL DESK

Warm Greetings to all SMRITI readers. This issue consolidates the accomplishments and remarkable works that happened in the department during the months of May, June and July.

Our students have always been an integral part of the department, they have been keen in participating in various technical and non-technical events. We are proud of our students Srikrishnan V, Shobith R, Rosan D and Rohith V who have won the "Build for Bharat Hackathon" supported by #StartupIndia and presented by Open Network for Digital Commerce(ONDC). The students were awarded a cash prize of \$3000(~Rs.2.50lakhs) and \$2000(~Rs.1.67lakhs) Google cloud credits. We congratulate Bhavana Anand, and Sadhana Anand of third year for being selected to receive a Generation Google Scholarship of \$2500 during this academic year.

Whether it be contests or internships, the students are striving hard to upgrade their skills to be employable. In that way, we are glad to see our students who have got internships at CMU USA, University of Albert, Ecole Polytechnique Montreal, and Lakehead University, Canada.

We congratulate Rishab S of 3rd-year CSE who honored with a cash prize of 2 lakhs INR under the High Cash Incentive scheme, awarded by the Sports Development Authority of Tamil Nadu (SDAT) and presented by the Sports Minister, Mr. Udhayanidhi Stalin, on July 30, 2024, at the Nehru Indoor Stadium his achievement in 60th National Roller Skating Championship.

We appreciate the efforts of Dr. J. Suresh, Dr. S. Rajalakshmi and Dr. N. Sujaudeen in organizing the regional round of iTech Hackfest 2024 in association with SAP, India. A value added course on "Practical Embedded Systems Programming: From C Fundamentals to STM32 Bare-Metal Development" was offered by the department. Heartfelt applause to Dr. Sakali Raghavendra Kumar and Dr. Nilu R. Salim for successfully defending their doctoral thesis. We wish them a fruitful academic and research career.

The National Board of Accreditation team visited the department from 31st May to 2nd June, 2024 for accreditation of UG -CSE Programme under Tire I category and the programme has been accredited for three years. Following the NBA visit the department worked together for the curriculum revision R2024. The curriculum and syllabus for the first year were designed, and the Board of Studies meeting convened during the first week of July .

The department accommodated twelve high school students from across TamilNadu during a period of two weeks as part of SHAPE 2024. This provided a platform to kindle the spirit of high schoolers to learn new technologies in the area of computer science.

This quarter was filled with enthusiastic achievements from students and faculty. These achievements make us foresee many more laurels to come.

SMRITI Editorial Team

EXTERNAL INTERACTIONS AND RECOGNITIONS

Talks Delivered at Other Universities

- Dr. Mirnalinee T T, Prof/CSE, delivered a talk on the faculty development program on Roadmap to Educational Transformation: Implementing Strategies of National Education Policy 2020 organised by AMET university in association with Association of Indian Universities.
- Dr. Mirnalinee T T, Prof/CSE, invited to deliver a lecture for the seminar on Deep learning and Generative AI organised by Department of ISTE, CEG, Anna university.
- Dr. D. Thenmozhi, ASP/CSE delivered a talk on "Offensive Language Identification from Code Mixed Languages with Hands-on Session in the Five-day FDP cum workshop on "Harnessing NLP and ML techniques for social media data analysis explicitly for Indian Languages" conducted by IIT Kottayam, Kerala on 25th June 2024.
- Dr. D. Thenmozhi, ASP/CSE delivered a talk on "Introduction to Generative and Explainable AI, Hands-on Session for Generative and Explainable AI" in the Six Days LTTP on "From TradAI to GenAI: A Hands-on Transition to the Generative World" conducted by CMR Institute of Technology, Bangalore on 13th June 2014.

DC Members / PhD Examiner

- Dr. Priyadharsini R, ASP/CSE served as DC member for a Synopsis meeting for a Anna university Scholar at Eswari Engineering College on 27/06/2024.
- Dr. Bhuvana J, ASP/CSE has served as examiner to conduct the Oral Examination of Ms. G. Priyadharshini, for the Ph.D Degree at SRMIST, Kattankulathur on June 14, 2024.
- Dr. Mirnalinee T T, Prof/CSE served as external examiner for the PhD viva voce examination of Mr. Maria Domininc Savio at SRM Institute of Science and Technology, Kattangulathur on 8th July 2024.

BOS member

- Dr. T. T. Mirnalinee served as BOS member at Sathyabama Institute of Science and Technology for the Curriculum and Syllabus framing of School of computing on 14th June 2024.
- Dr. T. T. Mirnalinee served as BOS member at Anna University, Guindy Campus for the Curriculum and Syllabus framing of Anna University Affiliated Institutions on 25th July 2024.

National Institute for Empowerment of Persons with Multiple Disabilities (Divyangjan)



Dr. T.T. Mirnalinee, Professor and Head/CSE, Dr. R. Amutha, Professor/ECE and Dr. Angeldeborah S,AP/CSE along with Raghul Yadav and Sathvika, III year CSE students visited the National Institute for Empowerment of Persons with Multiple Disabilities on 9th May 2024 to discuss a Cognitive game developed using the Xbox console.



HCLTech

Dr.S.Saraswathi ASP/CSE completed the course "AICTE_AMJ24_Cyber_Awariness" in HCL career shaper platform provided by HCLTech Cyber Security Program. The self-paced, self-learning program began on June 24, 2024, and covered four critical modules: Cyber Threats, Cyber Incident Protection, Cyber Scams, and Safe Social Media, followed by a test. Each module provided valuable insights and practical knowledge on safeguarding digital environments. This training has significantly enhanced my understanding and ability to teach cybersecurity effectively.

Drexel University, Philadelphia, USA



- Dr. T. T. Mirnalinee Prof. & Head and Dr. R. Kanchana ASP/CSE attended the online meeting on organized by Dr. Albal, SACE for getting the details of MS(MLE) program offered by SSN SACE and Drexel University, Philadelphia, USA. The Drexel team Dr. Rogelio, Dr. Sherry Levin, Sr. Director for graduate affairs and recruitment, Dr. Kapil Dandekar, Dr. Kookre Ma, Dr. Anup Kumar Das, Associate Dept Head, Electrical Computer Engineering, Dr. Meghan Foster, MS Advisor for ECE introduced the program giving all the details and clarified the doubts.
- Dr. R. Kanchana ASP/CSE counseled the applicants of MS(MLE) program offered under direct pathway by SSN-SACE and Drexel University, Philadelphia, USA and conducted the entrance exam
- Dr. R. Kanchana ASP/CSE and Dr. S.V. Albal, SACE attended a meeting on 27th Jun 2024 to clarify the doubts regarding the MS MLE program offered by SACE-Drexel. One of the applicants Ashthosh and his guardian attended the meeting and clarified doubts.

Interview Panel Member

Dr. T. T. Mirnalinee served as a panel member for faculty selection at SNU C on 27th June 2024

External Examiners

- Dr. Mirnalinee T T, Prof/CSE, served as External examiner for evaluating UG projects for the BE(CSE) students at CEG, Anna university.
- Dr. Mirnalinee T T, Prof/CSE, served as External Examiner for evaluating BTech(IT) students project at IST Department, at CEG, AU, Chennai.
- Dr. R. Kanchana acted as an external examiner for project viva-voce for BE(IT) in the department of IST, CEG, Anna University, Chennai on 25th May 2024.
- Dr.P.Mirunalini served as External Examiner and conducted project viva voce Examination at Department of Information and Science Technology, College of Engineering for the Fourth semester MCA (Regular & Self-Supporting) students on 5th June 2024.

INDUSTRY COLLABORATION

This period the department was glad to collaborate with various MNCs and start ups like HCL Technologies, KAL-M Robotics and Innovations, Cybernaut Edu-Tech, ST Microelectronics, GeeplexTech Solutions Pvt Ltd, Soil of Life, K.H. Exports India Pvt Limited and Solaiera (Solutions AI Era), Hyderabad . These interactions paved the way for many internships and collaborative research progress.

HCL Technologies

Dr. Arun Janarthanan, Technology Director and Engineering, Practice Head - EdTech Business, HCL Technologies visited the department on 14th June 2024 to interview the ME(CSE) students to offer internships to them. Dr. R. Kanchana ASP/CSE organized it.

KAL-M Robotics and Innovations

Dr. R. Kanchana ASP/CSE initiated discussions with Mr. Harish, Founder of Kal-M, a start up on Robotics and he agreed to offer internships for III year BE students. The shortlisted students were routed to Kal-M on 19th June 2024 for interview. Dr. B. Prabavathy shortlisted the students.

Cybernaut Edu-Tech

Dr. T. T. Mirnalinee and Dr. B. Prabavathy have convened a meeting with Mr. Jayasurya Gnanavel, CEO and Founder, Cybernaut Edu-Tech, and his team for possible collaboration with SSN for collaborative research, conducting training programmes and workshops on June 14 and 16, 2024.

ST Microelectronics

Dr. T. T. Mirnalinee, Dr. Angel, Dr. KR Sarath Chandran, Dr. S. Rajalakshmi, Dr. J. Bhuvana interacted with Dr Mahesh Chowdhary of ST Microelectronics on June 4th.

GeeplexTech Solutions Pvt Ltd

On 29th Feb 2024, a team from GeeplexTech Solutions Pvt Ltd, Singapore viz Mr. Sirraj, Mr. Hilal and Mr. Zufahar visited the department and Dr. T.T. Mirnalinee presented the research highlights of the department. Dr. Angel Deborah AP/CSE, and Dr. K. R. Sarathchandran AP/CSE, along with the students demonstrated AR/VR based projects. Dr. R. Kanchana organized the meeting.

Soil of Life

Dr. T. Mirnalinee, Prof. & Head/CSE, Dr. R. Kanchana, ASP/CSE, Dr. J. Bhuvana, ASP/CSE, Dr. S. Angel Deborah AP/CSE, interacted with Dr. Janki and her team from Soil of Life, A Startup from Chennai regarding collaborative research in agriculture and BIRAC PACE proposal submission on 12th,24th,29th Apr 2024.

K.H. Exports India Pvt Limited

Mr. Md. Rafeeuddin, Deputy Vice President, K.H. Exports India Pvt Limited, Chennai and his team visited the department. Dr. T. T. Mirnalinee, Prof. & Head, Dr. R. Kanchana ASP/CSE, and Dr. J. Bhuvana ASP/CSE, interacted with them for possible collaboration and consultancy projects on 9th May 2024.

Solaiera (Solutions AI Era), Hyderabad

Solaiera (Solutions AI Era) is a Hyderabad based startup focusing on machine learning, artificial intelligence, Gen AI products and solutions. In July 2024, Solaiera expressed keen interest to collaborate with SSN-Computer science engineering department for pursuing research in ML, AI, Image processing pertaining to domains like healthcare, education and so on.

The signing of MoU between SSN and Solaiera has been scheduled for the 2nd week of August month. The CEO and founder of Solaiera, Mr.Sasikanth will visit our campus for the same and have interactions with students and motivate them on research opportunities in multiple domains using ML, AI, responsible Gen AI.

Mr.Sasikanth also had virtual discussions with Dr. TT Mirnalinee Prof & Head/CSE and Dr. Swarnalakshmi Ravi ASP/CSE related to broad scope of problem statement, proof of concepts and so on.



MEMORANDUM OF UNDERSTANDING

Mr. Sirajudeen, Mr. Zufahar and his team from Geeplex Tech Solutions Pvt Ltd, Singapore visited on 13th June 2024 and signed an MoU for collaborative research in the presence of Dr. Kala Vijayakumar, President, SSNI and Dr. V. E. Annamalai, Principal, SSNCE. Dr. T. T. Mirnalinee and Dr. R. Kanchana interacted with them further on the collaborative projects.



PUBLICATIONS

Patent Filed

Dr. S. Angel Deborah, Dr.K.R.Sarath Chandran, Dr. T. T. Mirnalinee and Raghul Yadhav , IV year CSE filed a patent titled “AI-based Virtual Shopping Kiosk with Dynamic Planogram for Immersive Shopping Experience” with application number 202441057684 on 30th July 2024 at Indian Patent Office.

Journal Publications

- Dr. Mirunalini P.,ASP/CSE, Conditional adversarial segmentation and deep learning approach for skin lesion sub-typing from dermoscopic images, Neural Computing and Applications, Vol:online, issue:online, Scopus, IF:6.0, Quartile:Q1
- Dr. Rajalakshmi S.,AP/CSE Dr. Mirnalinee T T., Professor/CSE Dr. Milton R S., Professor/CSE, A novel similarity measure SF-IPF for CBKNN with implicit feedback data, Data Technologies and Applications, Vol:Ahead of print (Published Online), issue:Ahead of print (Published Online), Clarivate, IF:1.9, Quartile:Q2.

- Dr. S.V. Jansi Rani, ASP/CSE Iacovos Ioannou, R. Swetha, R.M. Dhivya Lakshmi, Vasos Vassiliou, A novel automated approach for fish biomass estimation in turbid environments through deep learning, object detection, and regression, Ecological Informatics, Volume 81, 2024, 102663, ISSN 1574-9541.
- Dr. Beulah A.,AP/CSE, Imran Maajitha S. M., Archatha R. and Naveena P., Dog Breed Identification using Deep Learning, Indian Journal of Natural Sciences, Vol : 15, issue : 84, Clarivate, IF:2.742.
- Dr. Felix Enigo V. S.,ASP/CSE, Performance of Binarization Algorithms on Tamizhi Inscription Images: An Analysis, ACM Transactions on Asian and Low-Resource Language Information Processing, Vol:23, issue:5, Clarivate, IF:2.35, Quartile:Q2, DOI:<https://doi.org/10.1145/3656583>, ISSN:2375-4699
- Dr. Rajalakshmi S.,AP/CSE Jassem M, UG student, Amaan Meer, UG student, Angel Deborah S, AP/CSE, Eye Disease Detection in Retinal Images Using Deep Transfer Learning Techniques, INFOCOMP Journal of Computer Science, Vol:23, issue:1, DOI:<https://infocomp.dcc.ufla.br/index.php/infocomp/article/view/3414>., ISSN: 1807-4545 (print) e-ISSN: 1982-3363 (online)
- Prabavathy Balasundaram, Pradeep Ganesh, Pravinkrishnan K, Rahul Kumar Mukesh, A Novel Technology Stack for Automated Road Quality Assessment Framework using Deep Learning Techniques, Emitter International Journal of Engineering and Technology, Vol:12, issue:1, Clarivate.
- Prabavathy Balasundaram, Sushaanth Srinivasan and Sharvesh Shankar, A Novel Multimodal-imaging based Approach for Early Detection of Glaucoma using Deep Learning Techniques, International Journal of Natural Sciences, Vol:15, issue:84, Clarivate.

Conference Presentations / Publications

- Dr. Beulah A., AP/CSE presented a paper titled "Diagnosis of Central Canal Spinal Stenosis from Lumbar Mid-sagittal MR Images" 3rd International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI-2024) held at St. Joseph's College of Engineering, Chennai, India during 9th & 10th May, 2024.
- Dr. Saraswathi S,ASP/CSE Presented a paper "CUSTOMIZED TRAFFIC SIGN DETECTION" in International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI) held on 9th & 10th May, 2024 Organised by St. Joseph's College of Engineering, Chennai, India.
- Dr. Saraswathi S,ASP/CSE Presented a paper " BLOCKCHAIN BASED RESEARCH DATA REPOSITORY" in International Research Conference on Computing Technologies for Sustainable Development (IRCCTSD'24) held on 09 & 10 May 2024. Organized by Department of CSE, Vadapalani Campus, SRM University.
- Dr. Saritha M, AP/CSE presented a paper titled "Thermal Intelligence: Exploring AI's role in optimizing thermal systems – A review" in the International Conference on Sustainable in Materials, Manufacturing and Automation (ICSIMMA2024) held during April 17-18, 2024 organized by Kalasalingam Academy of Research and Education, Krishnankovil (To be published in Springer Interactions).

- Dr. Saritha M, AP/CSE published a paper titled "The Impact of additive Manufacturing: Revolutionizing Industries across the globe" in the Proceedings of the International Conference on Sustainable in Materials, Manufacturing and Automation (ICSIMMA2024) held during April 17-18, 2024 organized by Kalasalingam Academy of Research and Education, Krishnankovil (To be published in Springer Interactions).
- Dr. Thenmozhi D,ASP/CSE published the following paper in FIRE 2023. Bharathi Raja Chakravarthi, Sripriya N, Bharathi B, Nandhini K, Subalalitha Chinnaudayar Navaneethakrishnan, Thenmozhi Durairaj, Rahul Ponnusamy, Prasanna Kumar Kumaresan, Kishore Kumar Ponnusamy, Charmathi Rajkumar, "Overview of Sarcasm Identification of Dravidian Languages in DravidianCodeMix@FIRE-2023", In Proceedings of the Forum of Information Retrieval and Evaluation FIRE-2023. Dec 2023, CEUR, Vol.3681, pp.231-239.
- Dr. Thenmozhi D,ASP/CSE published the following paper in FIRE 2023. Shanmitha Thirumoorthy, Manavh N R, Durairaj Thenmozhi, Ratnavel Rajalakshmi, "A Few Shot Learning to Detect Sarcasm in Tamil and Malayalam Code Mixed Data", In Proceedings of the Forum of Information Retrieval and Evaluation FIRE-2023. Dec 2023, CEUR, Vol.3681, pp.299-305.
- Dr. Thenmozhi D,ASP/CSE published the following paper in FIRE 2023. Madhumitha.M, Kunguma Akshatra.M, Tejashri.J, C.Jerin Mahibha, Durairaj Thenmozhi, "Sarcasm Detection in Dravidian Languages using Transformer Models", In Proceedings of the Forum of Information Retrieval and Evaluation FIRE-2023. Dec 2023, CEUR, Vol.3681, pp.306-318.
- Dr. Thenmozhi D,ASP/CSE published the following paper in FIRE 2023. V Indirakanth, Dharunkumar Udayakumar, Thenmozhi Durairaj, B. Bharathi, "Sarcasm Identification Of Dravidian Languages (Malayalam and Tamil)", In Proceedings of the Forum of Information Retrieval and Evaluation FIRE-2023. Dec 2023, CEUR, Vol.3681, pp.327-335.
- Dr. Thenmozhi D,ASP/CSE published the following paper in FIRE 2023. Seetharam Killivalavan, Durairaj Thenmozhi, "Software Metadata Classification based on Generative Artificial Intelligence", In Proceedings of the Forum of Information Retrieval and Evaluation FIRE-2023. Dec 2023, CEUR, Vol.3681, pp. 615-623.
- Dr. Saraswathi S,ASP/CSE, the following conference paper got published. Kanagapriya, S. K., V. Vijeya Kaveri, S. Saraswathi, and V. Meenakshi. "Revolutionizing Brain Tumor Diagnosis with Enhanced Deep Learning and Transfer Learning Algorithms." In 2024 Ninth International Conference on Science Technology Engineering and Mathematics (ICONSTEM), pp. 1-10. IEEE, 2024.
- Ravindran V, Shreejith Babu G, Aashika Jeti Rajalakshmi Sivanaiah, Angel Deborah S, Mirnalinee T T, Milton R S, TECHSSN at SemEval-2024 Task 10: LSTM-based Approach for Emotion Detection in Multilingual Code-Mixed Conversations, Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), as a part of 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2024), Mexico City, Mexico, pages 763–769 June 20-21, 2024 ©2024 Association for Computational Linguistics. <https://aclanthology.org/2024.semeval-1.109>

- Venkatasai Ojus Yenumulapalli, Pooja Premnath, Parthiban Mohankumar, Rajalakshmi Sivanaiah and Angel Deborah Suseelan, TECHSSN1 at SemEval-2024 Task 10: Emotion Classification in Hindi-English Code-Mixed Dialogue using Transformer-based Models, Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), as a part of 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2024), Mexico City, Mexico, pages 833–838 June 20-21, 2024 ©2024 Association for Computational Linguistics. <https://aclanthology.org/2024.semeval-1.119>
- Rohith Arumugam S, Angel Deborah S, Rajalakshmi S, Milton R S, Mirnalinee T T, SSN_ARMM at SemEval-2024 Task 10: Emotion Detection in Multilingual Code-Mixed Conversations using LinearSVC and TF-IDF, Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), as a part of 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2024), Mexico City, Mexico, pages 730–736 June 20-21, 2024 ©2024 Association for Computational Linguistics. <https://aclanthology.org/2024.semeval-1.105>
- Shreejith Babu G, Ravindran V, Aashika Jetti, Rajalakshmi Sivanaiah, Angel Deborah S, TECHSSN at SemEval-2024 Task 1: Multilingual Analysis for Semantic Textual Relatedness using Boosted Transformer Models, Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), as a part of 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2024), Mexico City, Mexico, pages 907–912 June 20-21, 2024 ©2024 Association for Computational Linguistics. <https://aclanthology.org/2024.semeval-1.130>

SCHOLAR INFORMATIONS

Synopsis meeting

- Dr. T. T. Mirnalinee convened the Synopsis meeting for her full time PhD Scholar Mrs. D. Kavipriya.

Newly Joined Scholar

- Mr. Venkatesh Kanna J is registered as a Full-Time Scholar under the supervision of Dr.S.Angel Deborah
- Ms. Lakshmi Priya V is registered as a Part-Time Scholar under the supervision of Dr. S. Angel Deborah
- Ms. Seethalakshmi R is registered as a Full-Time Scholar under the supervision of Dr. R. Priyadharsini
- Ms. Rashmi N is registered as a Part-Time Scholar under the supervision of Dr. R. Priyadharsini
- Mr. Senbagam K is registered as a Part-Time Scholar under the supervision of Dr. R. Priyadharsini

- Ms.Saranya S is registered as a Part-Time Scholar under the supervision of Dr. P. Mirunalini

Ph. D Defense

I have successfully defended my thesis titled "Fault Tolerant Adder and Multiplier Designs for Machine Critical Systems" during the viva-voce examination held on JUNE 20, 2024, at 1.00 PM at the Senate Hall, IIITDM Kancheepuram, Chennai under the supervision of Dr Noor Mohammad Sk, Associate Professor from CSE Department, IIITDM Kanchipuram.



Dr Bishnu Prasad Das, Associate Professor from the Department of Electronics and Communication Engineering, IIT Roorkee and Prof. Sivaselvan, Professor from the Department of Computer Science and Engineering, IIITDM Kancheepuram, are examiners to my viva-voce examination.

Mr Sakali Raghavendra Kumar, AP/ CSE

I am deeply content to announce the successful completion of my PhD public viva voce examination on June 21, 2024. Firstly, I would like to extend my heartfelt thanks to my supervisor, Dr. Umarani Jayaraman, Assistant Professor, Department of Computer Science and Engineering, Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, for her unwavering support, insightful guidance, and invaluable feedback throughout my research. I am also thankful to my examiners and doctoral committee members for their time, thoughtful questions, and constructive feedbacks. Their expertise and insights have significantly enriched my understanding and will undoubtedly influence my future work. I would like to extend my gratitude to the entire IIITDMKancheepuramfraternity for their unwavering support and encouragement. Finally, I am grateful to my family and friends for their support and patience throughout this long and demanding process. Thank you all for being a part of this journey and helping me achieve this significant accomplishment.

Dr. Nilu R. Salim, AP/CSE

FUNDED PROJECTS APPLIED

- Project Title: Kissan-Sevak: Energy aware edge intelligent system for Organic farming, PI: Dr. Mirnalinee T T/Professor and Head, Co-PI: Dr. Kanchana R/Associate Professor, Dr. Bhuvana J/Associate Professor, Dr. S. Rajalakshmi/Assistant Professor, Dr. Angeldeborah S/Assistant Professor along with Dr. Janki Rangatia/ Founder & Director, Soil of Life & Mr. Siva Shankar G/ Project Manager, Soil of Life, Total Budget(INR): Rs.139.390 lakhs, Funding Agency: BIRAC-PACE.

- A project proposal titled “Niryathi Rachan: Deep learning based early detection and management of weed in banana crop using drone system” was submitted to BIRAC for possible funding under PACE Scheme on 15th May 2024 by Dr. R. Kanchana, Dr. S. Selvakumar (PI), NITT, and Dr. Prabhu G, Senior Scientist, ICAR-National Research Centre for Banana.
- A project proposal titled “Hrday Daura Khojak HDK : A Low-Cost, Light-Weight Enhanced ECG System for Quick Myocardial Infarction Detection” was submitted to BIRAC for possible funding under BIG Scheme on 14th June 2024 by Dr. R. Kanchana ASP/CSE with a budget of 33.23 lakh for 18 months.
- Dr.S.V.Jansi Rani, ASP/CSE Dr.T.T. Mirnalinee, Prof. & Head/CSE, Dr.S. Radha, VP, Dr. Satheesh kumar gopal was called for interview presentation for the project proposal on " Identification of marine biodiversity hotspots in deep ocean" by Deep Ocean Mission of Ministry of Earth sciences. The project was presented on June 3, 2024.
- Project Title: Cognitive Therapeutic PlayStation for Multiple Cognitive Disorders, PI:Dr. S.Angel Deborah, AP/CSE, Co-PI: Dr. T. T. Mirnalinee, Prof. & Head/CSE, Dr. R. Amutha, Prof/ECE, Total Budget(INR): Rs.24.34 lakhs, Funding Agency: CSRI.
- Dr P.Mirunalini along with Dr.Satheesh Kumar, Dr.Sakthivel Murugan S, Dr. Arun Ramaveera Pathiran attended a meeting to present their proposal titled "Hybrid ROV with Dexterous Robotic Manipulator for deep ocean" to the experts of Project Appraisal and Monitoring Committee (PAMC) on Deep Ocean Mission during 28th, May 2024.

PAPERS REVIEWED

- Dr.S.Rajalakshmi, AP/CSE reviewed four papers on June 18 and 24, 2024 for Fourth International Conference on Emerging Techniques in Computational Intelligence, ICETCI 2024 that will be conducted by Mahindra University, Hyderabad, India, from August 22 to 24, 2024
- Dr.S.Rajalakshmi AP/CSE reviewed two workshop proposals for Third International Conference on Speech and Language Technologies for Low-Resource Languages (SPELLL 2024) on June 19 and 23, 2024 that will be conducted by Vellore Institute of Technology (VIT), Chennai, on December 04-06, 2024.
- Dr. Saraswathi S,ASP/CSE, Reviewed three paper for the ICETCI 2024 : 4th International Conference on Emerging Techniques in Computational Intelligence, on 3-06-2024.
- Dr.S.Rajalakshmi reviewed three papers on July 5,9 & 10, 2024 for IICAIET 2024: IEEE International Conference on Artificial Intelligence in Engineering and Technology to be held in Kota Kinabalu, Malaysia on August 26-28, 2024

EVENTS ORGANIZED

- A value added course on “Practical Embedded Systems Programming: From C Fundamentals to STM32 Bare-Metal Development” from 10th May 2024 for I year BE(CSE) and 5-year integrated MTech (CSE) students (43) was organized. Organizers are Dr. T. T. Mirnalinee,Prof. & Head, Dr. R. Kanchana, ASP/CSE,

Dr. K.R. Sarathchandran AP/CSE, and Dr. S. Angel Deborah AP/CSE,. The resource persons are Dr. Arun Janarthanan, Technology Director and Engineering, Practice Head - EdTech Business, HCL Technologies and Mr. Mathi Yuvarajan T.K, Embedded Software Developer, HCL Tech – Freelance.

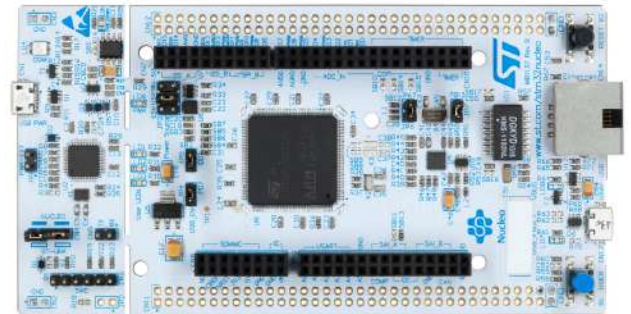
Feedback on Practical Embedded Systems Programming: From C Fundamentals to STM32 Bare-Metal Development

I am Jaswanth Sridharan from the CSE department, one of the students enrolled in the Practical Embedded Systems Programming: From C Fundamentals to STM32 Bare- Metal Development, a 2-credit value-added course. This course has been going well and has turned out to be a great opportunity to learn embedded system programming from scratch without relying on external libraries. During the first offline orientation session, Mr. Arun Janarthan and Mr. Mathi Yuvarajan highlighted the growing scope of a career in embedded development.

Initially, we were asked to strengthen our foundation in C programming and were given our levels of problem sets to solve, starting from basics to advanced. As I progressed through each level, I noticed a significant increase in the difficulty of the questions, which greatly helped improve my problem-solving skills. We were also encouraged to continuously update our progress in the WhatsApp group.

Later, we were provided with video resources and exercises to learn the basics of digital electronics and microchips. This was entirely new to me and added an interesting dimension to the course. These resources were comprehensive and well-structured. The hands-on exercises helped in solidifying my understanding of how digital electronics work and their application in embedded systems.

In the second offline session, Mr. Arun Janarthan introduced us to the Wowki online simulator. He gave a live demo on its basics and enlightened us on how it can be used for coding on an STM32 embedded board. He told us about how the Wowki simulator is an excellent tool that bridges the gap between theoretical learning and practical application. It allowed us to experiment and see the real-time impact of our code on a simulated embedded system.



We were then tasked with solving problems on HDL bits, starting with the most basic problems and progressing to more complex ones involving logic gates, combinational gates, and vectors. This exercise was particularly valuable as it helped me understand the importance of writing programs that specify hardware. Throughout the course, continuous progress updates were emphasized.

Overall, this course has provided me with a solid foundation in embedded programming, starting from the basics of C programming to the complexities of digital electronics and hardware description languages. The structured approach, practical exercises, and continuous support contributed to my learning. The insights gained from this course have sparked an interest in embedded



systems and have given me a clear understanding of the career opportunities available in this domain. I am grateful for the opportunity to learn from experienced instructors like Mr. Arun Janarthan and Mr. Mathi Yuvarajan and look forward to applying the knowledge and skills acquired in future projects and professional endeavors.

Coping with NP-completeness

Dr. Dhannya. S. M organized a guest lecture on Coping with NP-completeness on 05/06/2024. The talk was delivered by Prof. R. Subashini (ASP/CSE at NIT, Calicut). The talk gave better insights for the students into the concept of NP-Hard and NP-Complete class of problems, which are topics learnt as part of their DAA course curriculum.

Prof. R. Subashini (ASP/CSE at NIT, Calicut) gave a talk titled "Coping with NP-completeness" on 5th June 2024 for II year undergraduate students. The concept of NP-completeness is briefly introduced in the DAA course in Semester 4. The talk was aimed at giving a slightly more detailed perspective on the concepts of NP-hard and NP-complete problems, and how these problems are handled and/or solved in practice. Dr. R. Subashini is an Associate Professor at the Dept of Computer Science and Engineering in NIT, Calicut. She has been teaching for over 20 years with a comparable research experience in the area of Data Structures and Algorithms, Design and Analysis of Algorithms, Topics in Algorithms, Parameterized Algorithms and Complexity, and Theory of Computation. She completed her M.Tech and PhD in Computer Science and Engineering from IIT Madras. Based on the student feedback, the talk was very insightful.

Dr. Dhannya. S. M., AP/CSE

Financial Fundamentals: understanding Systems, Institutions, Technology, and Innovation

Dr. R. Kanchana ASP/CSE, and Dr. R. Priyadharsini ASP/CSE organized a guest lecture on Financial Fundamentals: understanding Systems, Institutions, Technology, and Innovation is organized on 17th May 2024 for II year BE(CSE) and I Year ME(CSE) students. The speaker was Mr. S. Dinesh, Vice President, Imarticus. The expert speaker gave insight on the following topics : Demystifying the financial System, BFSI unveiled, Capital markets and investment banking: Powering growth Leveraging technology across financial functions Exploring new age technologies in finance.





Hackfest 2024

SAP, India, in collaboration with SSN College of Engineering as the regional partner, hosted the prestigious National Level Technical Hackathon - Hackfest 2024 regional round on 3.5.2025. Dr. J. Suresh, ASP/CSE along with Dr. S. Rajalakshmi, AP/CSE & Dr. N. Sujaudeen, AP/CSE, organized the event. As part of the Hackfest 2024 Regional Round, the following members from industry visited our department for evaluating the presented projects.

- Ms. D. Parvadha Vardhini, Delivery Manager-Porting Center, Ford, Chennai.
- Vineel RAJAGOPAL, Valeo, Chennai,
- Mr. N. Nagarajan Muthukumar, General Manager, PDO HRIT, IT CORPORATE STAFFS & OTHERS, Ford, Chennai.
- Sudeep BAGHEL, Valeo, Chennai
- Dr. Arun Janarthanan, Technology Director and Engineering Practice Head, HCL Tech
- Mr. T. K. Mathi Yuvarajan, Embedded Software Developer, HCL Tech,
- Ms. Komathi Mohanasundaram, Delivery Manager HR, IT CORPORATE STAFFS & OTHERS, Ford, Chennai
- Gopalakrishnan Raghuram, CTS, Chennai
- Ms. Rajagopalan Radha, Delivery Manager, FORD PRO DATA & TECH, Ford, Chennai
- Mr. Subramanian Jaisankar, CTS, Chennai.
- Manepalli Phani, CTS, Chennai.

A total of 79 teams registered and participated, showcasing the high level of talent and enthusiasm in the technical community under the themes, i) Crowd Source Disaster Management, ii) Green Credit Management & iii) Renewable Energy. Out of these, 10 exceptional teams were selected for the second round, conducted on 17.6.2024 and evaluated by the SAP Team. In this round, 6 teams from SSN,CSE dept were among the chosen few. Out of

the 10 teams that made it to the second round, 6 teams, including 4 from SSN CSE, have been selected for the finals. This is a remarkable achievement and a testament to their hard work and dedication. The finals are scheduled on the 25th and 26th of July 2024, and we look forward to seeing their continued success.

EVENTS ATTENDED

VISIT to the CVRDE (DRDO)

Dr. Dhannya. S. M., AP/CSE has visited the CVRDE (DRDO) facilities at Avadi as part of the visit organized by DIA-RCoE, IITM, for members of academia, on 22.05.2024. The purpose of the visit was to understand the existing system and technology employed in the facilities, and to identify scope for collaborative research in order to bridge any gaps in the existing system. This research could be in the form of internships, final year projects for students or regular research collaborations between the faculty members of academia and the scientists of DRDO. Director, CVRDE and his team briefly explained the known issues in the present systems where the academia could contribute.

Combat Vehicles Research & Development Establishment (CVRDE) works on developing manned and unmanned variants of Armoured Fighting Vehicles (AFVs) and combat aircraft line-replaceable units. It has expertise in the development of systems viz. hull, turret, mechanical systems, engine, transmission, running gear systems, armament systems, gun control systems, fire control system, electrical and electronic systems, and related technologies. CVRDE has capabilities in system integration & field evaluation of various AFVs and its systems.

DRDO Industry Academia Ramanujan Centre of Excellence, IIT Madras (DIA-RCoE, IITM) arranged a visit for the faculty members of a few engineering colleges to the CVRDE facility located at Avadi, Chennai. This includes faculty members from IITM, SSN, SRMIST and VelTech. A van was arranged from IITM at 8.30 which reached the CVRDE campus at 10am. Dr. O.R. Nandagopan, Director of DIA-RCoE, IITM accompanied the group.

A short address by Dr. K. G. Narayanan (who had retired as a distinguished scientist from DRDO and has worked in multiple advisory roles including as Director of Research Centre at SSN, and who happened to be a visitor at the facility yesterday) was followed by a short presentation on the CVRDE facilities by the director of CVRDE Mr. J. Rajesh Kumar. He mentioned that the purpose of arranging this visit was to improve the research collaboration between academia and DRDO. Following this, Dr. Nandagopan facilitated interaction between the faculty members and the scientists at DRDO. The interaction was followed by visits to three facilities – Running Gear Division, Engine Transmissions Systems (1500 kW Engine Test Facility) and Wheel Test Facility.

Relevance to CS Students: While the opportunities of CS students in the core working of the labs seem to be a little unclear at the outset, it is quite possible to find opportunities in developing simulation software, analysing the large volumes of data generated from the test facilities, working on image processing modules for the cameras in tracked vehicles, developing software to control and monitor the tests and so on.

Long-Term Training Programme on "From TradAI to GenAI: A Hands-on Transition to the Generative World"

We attended the Long-Term Training Programme (LTTP) titled "From TradAI to GenAI: A Hands-on Transition to the Generative World," held from June 10 to June 15, 2024. The first day kicked off with an insightful session on

AI, ML, and DL fundamentals, led by Prof. Sugunadevi from CMRIT, setting a strong foundation for the week ahead. This session highlighted key concepts and applications in image and video processing. Throughout the week, we engaged in hands-on sessions and lectures on various aspects of Generative AI. A particularly engaging session was conducted by Dr. Ciyamala Khusbu, who provided practical experience in text, image, and video analytics using state-of-the-art tools and techniques.

As the week progressed, the sessions delved deeper into specialized topics. On June 12, Dr. Sangeeta Bhanja Chaudhuri introduced the metaverse and related research directions, broadening our understanding of this emerging field. This was followed by practical sessions on generative and explainable AI by Dr. Thenmozhi D, and hands-on LLM applications led by Dr. Poorani M. The program concluded with a feedback session on June 15, led by Dr. Senthil Velan S, allowing us to reflect on our learning experiences and gain valuable insights into future research directions in Generative AI. Overall, the LTTP was an enriching experience that offered a comprehensive blend of theoretical knowledge and practical skills.

Dr.N.Sujaadeen

Dr.K.R.Sarath Chandran

Dr.S.Lakshmi Priya

Six days Short-Term Programme on ICT for Higher Educational Institutions

Dr. Sakali Raghavendra Kumar, Dr. J Rajeswari and Dr. Nilu R salim from CSE Department, SSN College of Engineering attended the Six days Short-Term Programme on ICT for Higher Educational Institutions, June 10 - 15, 2024 organized by Malaviya Mission Teacher Training Centre , IIITDM Kancheepuram.

The Short-Term Programme on ICT for Higher Educational Institutions at IIITDM Kancheepuram is designed to enhance the knowledge and skills of faculty members and researchers in the area of Information and Communication Technology (ICT). The programme typically covers a range of topics including such as

1. Introduction to ICT: Understanding the basics and significance of ICT in the context of higher education.
2. Digital Teaching Tools: Training on various digital tools and platforms that can be used for effective online and blended teaching.
3. E-Learning Platforms: Overview and hands-on experience with popular e-learning platforms such as Moodle, Google Classroom, and others.
4. Content Creation and Management: Techniques for creating engaging digital content, including multimedia presentations, interactive modules, and more.
5. Types of Evaluation:
 1. Formative Evaluation: Continuous assessment to monitor student learning and provide ongoing feedback.
 2. Summative Evaluation: Final assessment to evaluate student learning at the end of an instructional unit.



6. Online Assessment Tools:

1. Utilization of platforms like Google Forms, Quizlet, Kahoot! and LMS-integrated tools for conducting quizzes, exams, and surveys.

7. Emerging Technologies: Exploration of emerging technologies like AI, IoT, and their applications in education.

The programme includes lectures, hands-on sessions, and group discussions, led by experts from academia and industry. Participants have the opportunity to learn about the latest trends in ICT and how they can be leveraged to improve the quality of education and administrative processes in higher educational institutions.

Renowned experts from various institutions recently shared their expertise on teaching pedagogy and open-source tools to enhance educational delivery. The distinguished speakers included Dr. John Sushil Packiaraj from VIT Vellore, Prof. G. Janardhanan and Prof. Renukadevi S from NITTTR Chennai, and Prof. Sivakumar M S from IIT Madras. Additionally, prominent experts from IIITDM Kurnool, NIT Calicut, and IIITDM Kancheepuram shared their insights, including Dr. Eswaramoorthy K V, Dr. Muneeswaran P, Dr. Srijith K, Dr. Preeth R, Dr. Sanjeet Kumar Nayak, and Dr. Jaishree Mayank.

These experts imparted valuable knowledge on effective teaching methods and demonstrated the use of open-source tools like Moodle, Flip classroom, Hot Potatoes, and Quiz to create an engaging learning experience. Their insights and guidance provided a valuable learning opportunity for educators seeking to enhance their teaching skills and leverage technology to improve student outcomes.

Dr. Sakali Raghavendra Kumar, Dr. J Rajeswari and Dr. Nilu R salim

OTHER ACTIVITIES

- Dr. R. Kanchana ASP/CSE, mentored 2 school students under SHAPE scheme from 22nd Apr to 3rd May for projects – 1. Animated story using Blender 2. A mobile APP for Food delivery.
- Dr. R. Kanchana ASP/CSE, interviewed the applicants of ME(CSE) program and tracked the status of selected students during May 2024.
- Dr.S.Rajalakshmi AP/CSE acted as a question paper setter for a subject in the end semester examinations Apr/May 2024 of Excel Engineering College (Autonomous), Komarapalayam on June 21, 2024.
- Dr.S.Rajalakshmi AP/CSE and Mr. S. Raghavendra Kumar AP/CSE attended the IIC Q3 council meeting to discuss the Q4 Activities plan conducted by the Principal and Dr. P.Vasuki at conference hall, Admin Block on June 17, 2024.
- Dr. K. R. Sarath Chandran AP/CSE acted as a proctor for the online test of first-year BE/BTech admission counseling in the system programming lab from 19/06/24 to 21/06/24.
- Dr. K. R. Sarath Chandran AP/CSE acted as a proctor for the online test of first-year BE Civil admission counseling in the CDC lab on 28/06/24.
- Dr.N.Sujaudeen AP/CSE acted as interview panel member for evaluating the Extracurricular activities for the first year admission of SSN College of Engineering on 28-06-2024.
- Dr. R. Kanchana ASP/CSE interviewed the applicants of ME(CSE), followed up with them till they are admitted.
- Dr. T. T. Mirnalinee served as a panel member for 2024 admission.
- Dr. T. T. Mirnalinee along with Dr. B. Bharathi attended the Faculty internal funding progress review meeting on 24th June 2024.
- Dr. B. Bharathi, Dr. S. Kavitha and Dr. R. Priyadharsini coordinated the admission process for rural students on 13th June, 2024.
- There was an orientation meeting for the applicants of PG programs on 7th Jun 2024 organized by SSN Marketing team. Dr. R. Kanchana attended the meeting and engaged the ME(CSE) applicants when they visited the department. Dr. T. T. Mirnalinee and Dr. R. Kanchana clarified all their doubts regarding the program. Dr. Albal, SACE addressed the applicants and introduced the PG program MS(MLE) offered by SACE-Drexel University.
- Dr. Rajalakshmi S.,AP/CSE, guided the student Mr. M. Nithish, I year, M.Sc Computer Science, Central University of Tamil Nadu from May 21, 2024 to June 24, 2024 in SSN Student Summer Internship (SSI 2024) Programme.

ME(CSE) ORIENTATION - 2024-2026 BATCH

The orientation for ME(CSE) I year students was organized on the reopening day of 29th July 2024. 18 students have joined this batch. General guidelines (Infrastructure, Labs, discipline, attendance, Internships, NPTEL, Value added courses, IFP) was given by Dr. T.T. Mirnalinee, Prof. and HoD. A motivational talk was given by Dr. R. S. Milton, Prof./CSE. The OBE, Curriculum and Assessment was delivered by Dr. R. Kanchana, Assoc. Prof./CSE. Dr. S. Kavitha, Assoc. Prof./CSE talked about various research groups in the department. Few research scholars shared their research experience. Dr. N. Sujaudeen, AP/CSE introduced Professional societies in the department. Dr. J. Bhuvana ASP/CSE and Dr. S. Angel Deborah AP/CSE spoke about coding clubs in the department. The information about STIRS was given by Dr. S. Rajalakshmi AP/CSE. Few final year M.E students shared their study experience. The session was coordinated by Dr. R. Kanchana and Dr. A. Beulah.



NBA ACCREDITATION



NBA team visited our department during 31st May to 2nd June, 2024 for accreditation of UG -CSE Programme under Tire I category. The accreditation status for the UG-Computer Science & Engineering have been decided by NBA from the AY 2024-25 to 2026-27 i.e. upto 30/06/2027.



CURRICULUM R2024

The curriculum revision R2024 for BE (CSE) was initiated by the principal on June 7th, 2024. The total number of credits remains unchanged for R2024. The curriculum and syllabus for the first year were designed, and the Board of Studies meeting convened on July 3rd, 2024, where recommended changes were incorporated. Subsequently, the Academic Council meeting on July 19th, 2024, approved the first-year syllabus and the overall curriculum for all semesters.

Key features of the R2024 curriculum include:

- SDG Experiential Lab for the first four semesters focusing on skills development.
- Introduction to Internet of Things (IoT) and Competitive Programming introduced as new courses.
- Introduction of a mini project in the sixth semester.
- Program core courses include 5 Labs and 10 Theory-cum-Practical courses.
- Several elective courses are TCP courses.
- Project-based courses such as Fundamentals and Practice of Software Development, Data Structures Lab, Internet Programming Lab, and Machine Learning Lab are integrated into the curriculum.

SHAPE 2024

SHAPE 2024, the 2-week national school students' internship programme, started from Monday, April 22nd, till May 3rd, 2024. This year, 40 meritorious students from 24 top schools have participated.

The Department of CSE conducted the orientation session for the school students of SHAPE 2024 programme on April 22, 2024. Dr.T.T. Mirnalinee, Head of the Department explained about the department, courses offered and the facilities. Dr. B. Prabavathy showcased the software projects done during Shape 2023. Dr. S.Rajalakshmi explained some hardware projects that were done as a part of IFSP. Mr. Sanjith of final year CSE shared his experience of being a participant of Shape 2019 programme. Ms. Alamelu of third year explained the opportunities given by the department by demonstrating her projects done in hackathons.



Following Students interned in our department during 22.04.2024 to 03.05.2024.

Mentor Name	Student Name	School Name	Project Title
Dr. R. Kanchana	B. Rohit Ram,	YRTV Matriculation Higher secondary School	Mobile App for Food Delivery
Dr. R. Kanchana	Sanjana Mummaneni ,	Vana Vani MHSS	Developing an Animated Story using Blender
Dr. B. Prabavathy	I.ADHITHYA	YRTV Mat. Hr. Sec. School, Sivakasi	Hand Cricket Game using HTML, CSS and JavaScript
Dr. D. Thenmozhi	SUHANA VIJAYAKUMAR	Dav Sr. Secondary school, Mogappair, Chennai	Explainable AI for detecting offensive words from social media
Dr. Y.V. Lokeswari	Janani Kumaresan	Vana Vani matriculation higher secondary school	Health Management with Diet Plan
Dr. Y.V. Lokeswari	Harini G	PSBBSS School KK Nagar	Music Player using Python
Dr. Y.V. Lokeswari	P L Vijayalakshmi	Sir Sivaswami Kalalaya, Mylapore, Chennai.	Extraction of image from text
Dr. V. Felix Enigo	Sruthika	Alpha Mat.Hr.Sec.School	Farmers' Friend App
Dr. B. Bharathi	Laxmi Priya	DAV senior secondary school, Mogapair	Voice-activated Quiz Game
Dr. P. Mirunalini	Siddharth S	Balaji Memorial Omega International School, Chennai	Object detection on road scenes
Dr. S. Angel Deborah	Luv Barnwal	PNC Cognitio School	ROAS Prediction and Suggestion System
Dr. Venkatavara Prasad	CH Hasini	Chinmaya vidyalaya, Virugambakkam	Generating QR code with Python

During their internship period, students were trained on the respective technologies by the faculty members. Furthermore, they were taught to design the application from fine-grained to coarse-grained. Relevant to that, students were asked to explore and implement the design, which was verified incrementally by the faculty members. Once the implementation was over, students were taught to design the poster, and they were trained to present the project. Finally, posters were presented on the 2nd floor of the CDC, SSN CE for the project exhibition, and the students presented them successfully to the participants.



Luv Barnwal • 1st

Student at PNC Cognitio School, Whitefield, Bengaluru
2mo • 1

I recently got selected for SHAPE, a 2 weeks internship program with the prestigious **SSN College of Engineering** at Chennai based on my 11th-grade result, where I built a supervised learning model using Random Forest in Python. I selected this model out of Linear Regression, Decision Tree and Random Forest all part of Supervised Learning Models in ML to predict Return on Advertisement Spend under different categories like TV, Radio and Newspaper. The program was intensive and intuitive, as I was able to learn one of the most important disciplines of Artificial Intelligence.

I acquired the relevant data from Kaggle and then trained the model using this data through Python. After testing, I got an R-squared prediction accuracy level of 98%. I'd also like to thank my professor **Angel Deborah Suseelan Dr. S. Angel Deborah**, Asst. Professor/CSE for her guidance and supervision in making this program successful and a valuable learning experience.

The attached document provides a comprehensive overview of my project, including a detailed process flow diagram, sample screens from our program, and additional project details. Please refer to the document for a thorough understanding of my project.

Luv Barnwal SHAPE Poster • 1 page

ROAS Prediction and Suggestion System
Luv Barnwal, PNC Cognitio School
Dr. S. Angel Deborah, Asst. Professor/CSE

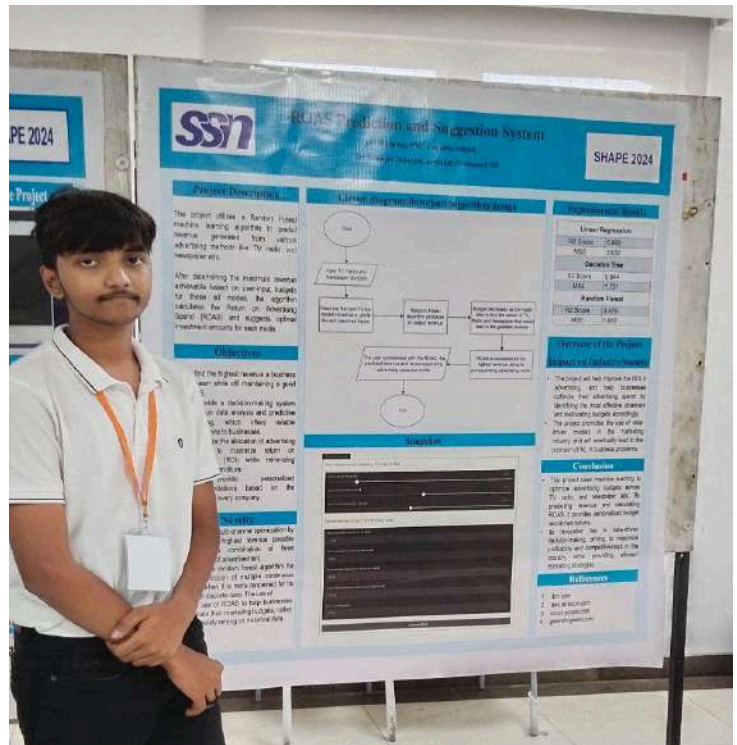
Project Description
The project utilizes a Random Forest machine learning algorithm to predict revenue generated from various advertising methods like TV, radio, and newspaper ads. After determining the maximum revenue achievable based on a universal budget for these ad models, the algorithm calculates the Return on Advertising Spend (ROAS) and suggests optimal investment amounts for each model.

Classical diagram/flowchart/algorithms/designs
The flowchart illustrates the process: Start -> Input TV, Radio and Newspaper Budget -> Feed the Random Forest model (which is a supervised learning model trained on historical data) -> Random Forest algorithm predicts the Return on Advertising Spend (ROAS) for each model -> Budget Allocation on the model (Based on the ROAS of the TV, Radio and Newspaper models and the total budget) -> End.

Experimental Results

Model	R2 Score	MAE
Linear Regression	0.882	1.812
Decision Tree	0.844	1.775
Random Forest	0.979	0.889

Leave your thoughts here... @ Post



STUDENT SUMMER INTERNSHIP

(SSI 2024)

Students pursuing UG/PG degree in any academic institution, willing to carry out Summer Internship at SSN College of Engineering, Chennai in the field of Computer Science and Engineering, can obtain this Internship Program through SSI 2024 application.

Under this scheme, the Department of CSE has received 288 intern applications. We have scrutinized the intern applications to solve eleven potential research problems. The internship window was from 13th May 2024 – 3rd August 2024 for about 4 to 8 weeks and it was offline. The selected interns will be given a monthly stipend of Rs 3000 and free accommodation in the Hostel.

Following are the details of the students involved in summer internship:

Name of the Student	Institution	Department of the Student	Year of Study	Project Title	Name of the Mentor
MAHENDRA KUMAR REDDY KAKARLA	JNTUA college of engineering kalikiri	CSE	III Year UG	Face recognition in challenging environments	Ms. Nilu R Salim
John Abishek Jaisingh P	Anna University regional campus, Tirunelveli	ECE	III year UG	Abnormal event detection, Medicinal plant detection and localization	Dr. T. T. Mirnalinee
A V Ritwik	Puducherry Technological University	CSE	III year UG	Automatic Question Generator and Summarizer using NLP	Dr. B. Bharathi
EZHILAN R	NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY	EEE AND MINOR IN AI AND IOT	III year UG	Multimodal social media analysis	Dr. B. Bharathi
BALAJI R R	Thiagarajar college	MSc., Computer Science	I year PG	Myocardial Infarction Detection from ECG using Deep learning Techniques	Dr. P. Mirunalini
Sai Kishore	Hindustan Institute of Technology and Science	B. Sc (AI & DA)	III year UG	Analysis of EEG signals	Dr. S. Kavitha

Sneha	Knowledge Institute	CSE	II Year UG	Weather prediction using explainable AI	Dr. S. Rajalakshmi
NITHISH M	CENTRAL UNIVERSITY OF TAMILNADU	COMPUTER SCIENCE	I year PG	DEEPFAKE IMAGE DETECTION	Dr. S. Rajalakshmi
G.Sumanth	JNTUA college of engineering, kalikiri	Computer science and engineering	III year UG	Query based educational video summarisation	Dr. B. Prabavathy
Palamanickam	NIT Puducherry	EEE	III Year UG	Avatar Animation of Tamil short story in Indian Sign Language from Video input	Dr. B. Prabavathy
Shri Gayathri	Sastra University	CSE AI & DS Minor in Economics and Management	II year UG	Development of an Early Warning System for Climate change	Dr. B. Prabavathy

During their internship period, students were trained to perform literature survey, study and practice respective technologies in the respective area of interest by the faculty members. Furthermore, they were taught to design the application from fine-grained to coarse-grained. Relevant to that, students were asked to explore and implement the design, which was verified incrementally by the faculty members. Once the implementation was over, the students were taught to prepare the report, design the poster and write research paper. Further, the review was conducted on 25.07.2024 for the students to evaluate their projects. Finally, posters were presented in the review, and the students presented them successfully to the reviewers.

STUDENT ACHIEVEMENTS

Build for Bharat Hackathon

Second year CSE student team of Srikrishnan V, Shobith R, Rosan D and Rohith V have won the "Build for Bharat Hackathon" supported by #StartupIndia and presented by Open Network for Digital Commerce(ONDC). **The students were awarded a cash prize of \$3000(~Rs.2.50lakhs) and \$2000(~Rs.1.67lakhs) Google cloud credits.** The program was sponsored by Industry leaders Google Cloud, Antler, Protean, Paytm.



Left to Right: Srikrishnan V, Shobith R, Rosan D and Rohith V, II year CSE

DESCRIPTION OF THE PROBLEM STATEMENT SOLVED:

Customers are unable to 'look & feel' the product sitting at the comfort of their homes, so there is always an ambiguity of not knowing that their purchase was right or not. Building trust in the product or seller in an online marketplace has always been a challenge.

This is specifically true in India, where the Customer relies on its physical shopping experience, with many shopping assistants to build trust on their purchase or the seller.

Additionally, non-tech savvy users find it difficult to navigate through non-intuitive online interfaces.

The objective is to create a conversational interface that guides non-tech savvy buyers through the online shopping experience while also providing the immersive experience that provides a real world "shopping feel". Immersive experience would be useful for fashion shopping where the buyer gets to "try out" whatever they're trying to buy. The conversational interface should provide interaction through natural language speech / text & similar types of intuitive interfaces.

Generation Google Scholarship

Bhavana Anand, and Sadhana Anand, were selected as a Generation Google Scholarship (APAC): for women in computer science recipient during the academic year of 2024-2025 on 10th June 2024. They were chosen as part of the Generation Google Scholarship program in recognition of their strong academic achievements, demonstration of leadership, and commitment to diversity, equity, and inclusion in your chosen academic field and career. **Each received a one-time, non-renewable award in the amount of \$2,500 USD.**

The confirmation letter was shared to the students by the Institute of International Education, Inc. (IIE). IIE develops and implements many of the world's most prestigious and innovative scholarship and training programs, including supporting the flagship educational and cultural exchange programs of the U.S. Departments of State and Defense. More details about IIE can be found [here](#).



Bhavana Anand



Sadhana Anand

The Generation Google Scholarship Program is sponsored by Google and administered by IIE. The Generation Google Scholarship was established to help students pursuing computer science degrees excel in technology and become leaders in the field. This scholarship is given to individuals with strong academic achievements, demonstration of leadership, and commitment to diversity, equity, and inclusion in their chosen academic field and career. The details of Generation Google Scholarship can be found [here](#).

CO-CURRICULAR ACTIVITIES

- Amudhakavi, K.N.Anusha, R.Ponsubash Raj , G Sandhya and Siddharth of I year M.Tech CSE(Integrated 5 years) have participated in Hackfest' 24 held on 03.05.2024 organized by PSG iTech and SAP at national level in SSN College of Engineering, Chennai.
- SAP, India, in collaboration with SSN College of Engineering as the regional partner, hosted the prestigious National Level Technical Hackathon - Hackfest 2024 regional round on 3.5.2025. A total of 79 teams registered and participated, showcasing the high level of talent and enthusiasm in the technical community. **Out of these, 10 exceptional teams were selected for the second round, conducted on 17.6.2024 and evaluated by the SAP Team. In this round, 6 teams from SSN,CSE dept were among the chosen few. Out of the 10 teams that made it to the second round, 6 teams, including 4 from SSN CSE, have been selected for the finals. This is a remarkable achievement and a testament to their hard**

work and dedication. The finals are scheduled on the 25th and 26th of July 2024, and we look forward to seeing their continued success.

EXTRA - CURRICULAR ACTIVITIES

- Sridhar k, Subash, Ricson Jawahar, Sham,Subramanian, Shakthisree and Vishvasri from 3rd year have participated in YRC wall painting Event held on 2/05/2024 organized by Barclays at State level Adayar orphanage, Adayar Chennai.
- Sridhar k and Ricson jawahar from 3rd year have participated in YRC wall painting Event held on 03/05/24 organized by SSN YRC at State level.
- Niranjana A, Priyadharshini T, and R Rohan of 2nd year CSE have participated in a wall painting event organized by YRC at state level, of SSNCE held at Avvai Home, Adyar on 02/05/2024.
- Shankari S.R and Srikanth S of II year CSE have participated in "AI in Designing" held on 10.05.24 organized by Gradient, SSN Design Club at intra college level, SSN - IT Dept, Chennai.

60TH NATIONAL ROLLER SKATING CHAMPIONSHIP

Rishab S, 3rd-year CSE participated in the 60th National Roller Skating Championship held in Bangalore in December 2022, where I won a silver medal in the 3000m relay event. He was honored with a cash prize of 2 lakhs INR under the High Cash Incentive scheme, awarded by the Sports Development Authority of Tamil Nadu (SDAT) and presented by the Sports Minister, Mr. Udhayanidhi Stalin, on July 30, 2024, at the Nehru Indoor Stadium.



INTERNSHIP HIGHLIGHTS – ACADEMIC YEAR 2023-2024

UG Batch 2021-2025

- Total number of students: 136
- Number of students obtained internship: 136
- Internship obtained through CDC: 70
- Internship obtained through the department: 66
- Internship period – Approximately 2 months

Industry Internship

- No. of companies: 47
- Average Stipend: Rs. 20,850/-
- Maximum Stipend – Rs. 75,000/- by Citibank

Academic Internship

- CMU USA, University of Albert, Lakehead University, Canada, Ecole Polytechnique Montreal
- Average Stipend: Rs. 90000/-

Following are the significant internships by the students in their 3rd year of study:

- A Bhavana, CMU Research Internship
- Harini Mohan, Lakehead University, Canada
- Pooja Premnath, University of Alberta, Canada (Through the MITACS Globalink Internship Program)
- A Sadhana, Ecole Polytechnique Montreal, through Mitacs Research Internship Canada
- Sanjai Balajee, CMU, USA
- Aathish Sivasubrahmanian, Alamelu Kannan, Prahalad R, Priyaadharshini Ramesh, Shakthi Sree M N, Shivanni, Subhankar S, Subramanian T, Swetha J (Citibank)

PG Batch 2021-2025

- Total number of students: 14
- Internship period – Approximately 1 month

Industries with which they do internship

- Southern Heavy Engineering Pvt Ltd.
- NCR Atleos
- HCL Tech

TECHNICAL ARTICLE

Touch Before You Buy? Revolutionizing Touchscreen Technology with iTad

Imagine being able to feel the texture of images on your screen, experiencing the roughness of sand or the smoothness of silk through touch. This incredible new technology, called Interactive Touch Active Display (iTad), is the brainchild of researchers at the Indian Institute of Technology (IIT) Madras. Led by the brilliant Professor M. Manivannan from the Department of Applied Mechanics, this invention promises to transform the way we interact with digital devices by providing realistic tactile feedback that matches the visual content on screens.

Technology Overview

iTad works fascinatingly, without any moving parts. It uses a smart multi-touch sensor to detect finger movements. The secret behind this innovation is something called electroadhesion. Here's how it works:

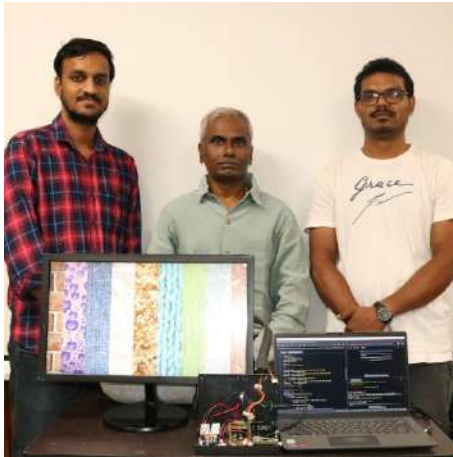
- **Electroadhesion:** This is a process where an electric field is used to create adhesive forces between the surface and the user's finger. When you slide your finger across the screen, tiny electric charges adjust the friction you feel, mimicking the texture of the visual content.
- **Surface Friction Modulation:** As you move your finger, the technology dynamically changes the surface friction in real time. If you're touching a picture of sand, the screen will feel gritty. If you're touching an image of silk, it will feel smooth. This change is immediate and precise, creating a realistic sensation of touch.
- **Multi-Touch Sensor:** The screen is embedded with sensors that can detect multiple touch points simultaneously. This means that you can feel textures with more than one finger at a time, enhancing the overall tactile experience.

Applications and Impact

The potential of iTad is enormous, especially for online shopping. One of the biggest issues with online shopping is that people often return products because they don't match their expectations—about 30% of items get sent back. But with iTad, you can "touch and feel" products before buying them, making shopping much more satisfying and reducing returns.

But that's just the beginning. iTad can be used in so many other areas, such as:

- **Cars and Gadgets:** Making controls feel more intuitive and interactive.
- **Digital Advertisements:** Creating captivating displays that grab attention.
- **Smart Homes:** Letting you control devices with a touch that feels natural.
- **Gaming:** Making games more immersive and exciting by adding a sense of touch.
- **Helping the Visually Impaired:** Giving tactile feedback to help navigate and interact with digital content.



[Link to video](#) (youtube)

Prof. M. Manivannan (C), Dept of Applied Mechanics, IIT Madras with IIT Madras Research Scholars Jagan KB (L) and Prasanna Routray (R)

Sources:

1. [Touchscreen Display That Could Allow You to Feel What You See](<https://www.electronicsforu.com/tech-zone/display-tech/touchscreen-display-that-could-allow-you-to-feel-what-you-see>)
2. [IIT-M Researchers Develop Touchscreen That Allows Users to Feel Texture of Images](<https://www.thehindu.com/news/national/tamil-nadu/iit-m-researchers-develop-touchscreen-that-allows-users-to-feel-texture-of-images/article66021917.ece>)

Vishnu Praba A J, III year CSE

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