SMRITI

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SSN

SNEAK PEEK

HOD'S DESK

This is the first semester after we obtained the autonomous status. It is very nice to see the idea of test week being implemented for the first year undergraduate students. The students no longer need to feel that they are writing tests throughout the semester. This provides an opportunity for the students to properly apportion their time for co-curricular and extra-curricular activities along with academics.

For the third successive year, we successfully organized the workshop on Computational Thinking for the first year undergraduate CSE students with fun-filled activities. I thank Prof. R. Ramanujam who stimulated the young minds with his engaging talk. I also thank him for giving several suggestions for the various activities that brought out the problem-solving abilities and analytical thinking skills of the students. I also thank Angel, Priya, Sarath, Bala and all the student volunteers for helping in organizing the implementation of various events effectively. Special thanks to Milton sir for his creditable efforts put in for the interesting activity based session on introducing machine learning concepts.

I commend Kanchana, Valli and Lokeswari for organizing the workshop on Big Data Technologies. I appreciate our postgraduate alumni Sasikumar and Srilakshmi for conducting the extremely useful hands-on sessions. One more workshop, Image and Language Processing using PyTorch that was organized by Dr. C. Aravindan, Mirunalini, Thenmozhi and Bhuvana was also very successful and was appreciated by all the participants.

I congratulate Dr. T. T. Mirnalinee for bagging the CTS Best Faculty Award on Teacher's day.

This year, the annual technical symposium INVENTE was coordinated by the CSE department. I compliment the office bearers of the Association of Computer Engineers and the faculty advisors for smooth conduct of a large variety of events. I am very pleased to see the student Sanjay Thiruvengadam emerging as elite with Gold medal in the NPTEL C programming course.

I congratulate all the students who have bagged prestigious placement and internship offers. I urge all the student teams who have received internally funded projects to work diligently and produce spectacular outcomes.

Dr. Chitra Babu
HoD/CSE

FACULTY ACTIVITIES

1. **Dr. S. Saraswathi** attended DC meeting at Easwari Engineering College, Chennai on 7th August 2018.

2. **Ms. A. Beulah and Mr. B. Senthil Kumar** accompanied III Yr B Sec students for Industrial Visit to Manatec Electronics Private Ltd., Pondicherry on 14th August 2018.

3. **Dr. V. S. Felix Enigo and Dr. J. Suresh** accompanied UG 3rd year A section and M.E- CSE 2nd year students for Industrial Visit to Manatec Electronics Private Ltd., Pondicherry on 21st August 2018.

4. **Dr. T. T. Mirnalinee** served as the PhD Public viva-voce Examiner for the thesis titled "Improved optimization Algorithms for Numerical Function Optimization and their Application to data Clustering"

5. **Mr. H. Shahul Hamead**, PI of the internal funded project "Prototyping Green Networks" presented his work to the mid-term project review committee at SSN Research Center. The Co-PI's **Dr. T. T. Mirnalinee, Dr. S. Sheerazuddin and Mr. K. R. Sarath Chandran** attended the review.

6. **Mr. K. R. Sarath Chandran**, PI of the internal funded project "Energy Aware Multimedia Processing in Handheld Devices through Real Time Hardware Reconfiguration" presented his work to the mid-term project review committee at SSN Research Center on 10th September 2018.

7. **Ms. K. Lekshmi**, PI of the internal funded project "Automated Hepatic Disease Diagnostic System for Carcinoma in Histopathology images" presented her work to the mid-term project review committee at SSN Research Center on 10th September 2018.

8. **Dr. B. Bharathi**, PI of the internal funded project titled as "Speech enabled interactive voice response system" gave a presentation on mid-term progress review on 10th September 2018. CO-PI: Dr. S. Kavitha.

9. **Ms. S. Rajalakshmi, Ms. R. Priyadharsini and Mr. H. Shahul Hameadh** conducted the Skype interview for student batches of ACM-W Hackathon on 15th September 2018.

10. **Dr. Chitra Babu** was invited to attend the ACM Annual International Symposium Compute 2018 at Chitkara University, Chandigarh during 12-14 October.

11. Mr. Saravanan Rajamanickam and Mr. Mohsin from Caterpillar visited SSN and had discussions with **Dr. Chitra Babu and Dr. T. T. Mirnalinee** regarding the "Master Sponsored Research Agreement". They provided clarifications for the issues raised by the SSN legal counsel.

12. **Dr. Chitra Babu, Dr. R. S. Milton, Dr. T. T. Mirnalinee and Dr. C. Aravindan** attended the AI and ML Conclave organized by the Robert Bosch Centre for Data Science and AI at IIT Madras.

13. **Dr.B. Bharathi** attended DC meeting at Dept. of ECE, SSNCE Chennai on Oct 10, 2018.

14. **Dr. K. Vallidevi, Dr. K. Madheswari and Dr. K. K. Nagarajan (ECE)** along with the students presented the proposal for the SSN funded Student Consortium Project titled "Smart Attendance Management System", at SSN Research Centre.

PAPER REVIEWS

1. **Dr. G. Raghuraman** reviewed the following papers for the Journal Measurement and Control:

   a. Advanced Face Recognition Algorithm for Automated Attendance Management System

   b. Automated Pollution Detection System using IoT and AWS Cloud

2. **Dr. B. Bharathi** reviewed a research article titled "Hidden-Markov-Model based Statistical Parametric Speech Synthesis for Marathi with Optimal Number of Hidden States" for International Journal of speech technology

3. **Dr. P. Mirunalini** reviewed a research paper titled " Multi-Sample Inference Network" for IET Computer vision Journal.

4. **Dr. P. Mirunalini** reviewed a research paper titled "Automatic Segmentation Of Epicardial Fat Using Doog Based Confined Contrast Histogram(Dc2h) Method" for Artificial Intelligence Computer Vision 2018 symposium conducted by Anna University.

5. **Dr. D. Venkata Vara Prasad** reviewed a research article titled "Clustering Protein Super Secondary Structure with ANN based SOM Machine Learning Approach using In-Memory Computing Environment "for the Journal of Computational and Theoretical Nanoscience.

6. **Dr. Chitra babu and Dr. S. Kavitha** reviewed a paper titled "Concept, Functionalities and Knowledge-centric Algebra: A Pattern Cube" for SADHANA - Academy Proceedings in Engineering Science.

PROJECT PROPOSAL SUBMITTED

Dr. D. Thenmozhi submitted a research proposal titled "An Automated Tool for Early Detection of Depression from Social Media Text for Mental Health using Deep Learning Approach to Assist Student Counsellors and Psychiatrists of Hospitals in India" to DST – EEQ scheme with a proposed budget of Rs. 33.022 Lakhs and duration of 3 years.

TALKS DELIVERED

Our department faculty members **Dr. R. S. Milton, Dr. Suresh J., Dr. S. Sheerazuddin, Dr. R. Kanchana and Dr. K. Vallidevi** delivered talks with hands-on, during the workshop on Latex organized by the dept of ECE, SSNCE for the PG students and faculty members of ECE department.

Dr. K. Vallidevi delivered an invited talk on "Virtualization in Cloud Computing" for the final year students of ECE department at Velammal Engineering College.

Dr. R. S. Milton gave inaugural talk in the National Workshop on Statistical Computing Using R, conducted by Madras Christian College on 27 September 2018.

EXTERNAL INTERACTION

Dr. Chitra Babu, Ms. R. Priyadarshini, Ms. S. Angel Deborah and six students of CSE visited IMSc on 1st August 2018 and had the discussion on "Computing 101: A Bootcamp for Computer Science" with Prof. Ramanujam

ACM EVENTS ORGANISED

1. **Dr. Chitra Babu** organized an expert talk by Dr. Manish Gupta, Co-founder and CEO of VideoKen at IIT Madras as an ACM India Chennai Professional Chapter activity.
2. **Dr. Chitra Babu** organized the 12th talk in the "50 years of Turing Award" talk series at IMSc by Prof. Venkatesh Raman on "Contributions of Tarjan and Hopcroft (1986 Turing award winners)" held on September 27, 2018.
3. **Dr. Chitra Babu** organized the 13th talk in the "50 years of Turing Award" talk series on "Contribution of 2004 Turing Award winners, Vint Cerf and Bob Kahn". The talk was given by Prof. Krishna Sivalingam, HoD, Department of Computer Science and Engineering, IITM at IIT Madras held on October 5, 2018.

FACULTY PUBLICATIONS

1. **Dr. D. Thenmozhi and Dr. C. Aravindan** published a paper titled "Ontology-based Tamil-English cross-lingual information retrieval system" in Sadhana-Indian Academy Science, Springer, 43:157, 2018. Doi: https://doi.org/10.1007/s12046-018-0942-7

2. **R. Priyadharsini, A. Beulah, T. Sree Sharmila**, "Optic Disc And Cup Segmentation In Fundus Retinal Images Using Feature Detection and Morphological Techniques" has been published in Current Science Journal, VOL. 115, NO. 4. PP . 748-752. Impact Factor: 0.843. ISSN: 0011-3891.

3. **P. Mirunalini and B. Bharathi and Nirupan Ananthamurugan and Skanda Suresh and Shreyas Gopal** have published paper titled "Multi-Level Smart Parking System" in International Conference on Computer, Communication, and Signal Processing (ICCCSP) and available in IEEE xplore.

4. **Nithish B Moudhgalya, Sharan Sundar S, Siddharth Divi, P Mirunalini, Chandrabose Aravindan, S. M. Jaisakthi** have published paper titled "Convolutional Long Short-Term Memory Neural Networks for Hierarchical Species Prediction" in participating the task conducted by CLEF 2018. The paper is available in CEUR proceedings ceur-ws.org/Vol-2125.

5. **Dr. B. Prabavathy** along with the students **Divya R, Divya Bharathi and Mageswari** published a paper titled "FMS++: An Enhanced Fleet Management System using Apache Spark Framework" in International Conference on New Trends in Engineering & Technology at GRT Institute of Engineering and Technology during 7th and 8th September 2018. (will be published in IEEE Xplore)

6. **Dr. B. Prabavathy** along with the a student **Rajalakshmi Ramadas** published a paper titled "A Prediction Model to Detect Diabetes for Pregnant Women using Spark Framework" in International Conference on New Trends in Engineering & Technology at GRT Institute of Engineering and Technology during 7th and 8th September 2018. (will be published in IEEE Xplore)

7. **D. Thenmozhi and G. Ravikumar** published paper titled "An Open Information Extraction for Question Answering System" in IEEE- International Conference on Computer, Communication, and Signal Processing (ICCCSP), DOI: 10.1109/ICCCSP.2018.8452854

8. **Suresh J and Sathya M(JRF)** published a paper, "Incremental Learning for Classification of Unstructured Data Using Extreme Learning Machine," Algorithms Journal (Special Issue: Algorithms for Decision Making), 11(10), 158, doi:10.3390/a11100158, Thomson Reuters (Impact factor - 1.067)

9. **Suvidha Rupesh Kumar, B. Bharathi**, presented a paper titled "Spoofing detection - A challenge in ASV - A survey", in International conference on cognitive Iot with Big data and Cloud at Hindustan Institute of Technology during 25 and 26 October, 2018.

10. **Daniel Jeswin Nallathambi, S. Arul Thileeban, Gajesh Sailesh Kumar Dr. D. Thenmozhi** have presented a paper titled "Voice Controlled Manipulator with Decision Tree and Contour Identification Techniques" in the 9th International Conference on Intelligent Systems (IS2018) held in Funchal, Portugal during 25 - 27 September 2018.

TECHNICAL PROGRAM COMMITTEE MEMBERS

1. **Dr. Chitra Babu, Dr. T. T. Mirnalinee and Dr. R. Kanchana** served as a member of TPC for ICIIT 2018: Third International Conference on Intelligent Information Technologies organized by CEG, Anna University, Chennai, India during 11-14, Dec 2018. Each reviewed three research papers.

2. **Dr. R. Kanchana** served as a member of TPC of IEEE TALE - Engineering Next-Generation Learning which is the IEEE Education Society's flagship Asia-Pacific (IEEE Region 10) international conference to be held in Dec 2018 at Australia and reviewed 3 papers.

EXTERNAL RECOGNITION

Dr. D. Venkata Vara Prasad and Mr. V. Balasubramanian have become IEEE Senior Members.

WORKSHOPS ATTENDED

1. **Dr. Chitra Babu** attended the Embedded Systems Safety and Security workshop organized by LDRA at Hotel Hilton..

2. **Ms. A. Beulah** attended Two days National level workshop on Image and Language Processing using PyTorch(ILP - 2018) organized by Departement of CSE, SSN College of Engineering during 26, 27 Sep 2018.

3. **Dr. T. T. Mirnalinee, Dr. R. Kanchana** participated in the worshop on "Effective Leadership - Mining for Coal" organized by International Association of Fecilitators on 24th Oct, 2018 at SSNCE

WORKSHOP ON BIG DATA TECHNOLOGIES WITH HANDS-ON

The workshop focused on the following emerging big data technologies to store, analyse and manage Big Data. Apache Hadoop, Apache MapReduce (MR), Apache Hive, Pig and Sqoop, NoSQL Databases – Mongo, HBase, Apache Spark, Spark Streaming, Structured Streaming. The speakers of the workshop were 1) Mr. Sasikumar Venkatesh, Data Engineer, Matizalin Technologies, Bangalore. 2) Ms. Srilakshmi Annapoorna, Full Stack Developer, Scientific Games, Chennai. 3) Mr. Prasanth Venkatesan, Full Stack Developer, Matizalin Technologies, Bangalore.

48 students from second, third and final year B.E. (CSE) from SSNCE, one research scholar and one faculty member registered and participated in the workshop. Hands-on was conducted in Programming with Apache MapReduce (MR), Apache Hive and Sqoop Programming, Redis and Mongo DB, Apache Spark streaming, Spark SQL. Programming assignments in MR and Hive were given to students and the best performers were awarded prizes. There were two prize winners in II year, 3 winners in III year and 2 in final year students. All the participants were awarded certificates. The participants were very enthusiastic and excited to learn the new technologies for managing big data. Feedbacks were collected from the participants and all of them felt good about the workshop.

Organized by Convener: Dr. Chitra Babu

Co-ordinators: Dr. R. Kanchana, Dr. K. Vallidevi, Ms. Y. V. Lokeswari

Participant Experience:

This workshop began with the introduction to Distributed computing and Big Data by Ms. Srilakshmi, an Alumnus of our college who is currently Full Stack Developer, Scientific Games, Chennai. Following that there was a tutorial session on the installation of Hadoop in a single node. Further, Word Count Application was demonstrated and was asked to implement Word Count, the problems like Counting the number of Sales and Counting the Payment from sample Sales Details CSV file. On the next day, Hive database was installed and sample queries were executed. There was a tutorial session to install Sqoop and load the data from CSV file to Hive database.

 In the next session, the concepts of NoSQL databases like Redis and MongoDB were discussed by Mr. Prasanna Venkatesan, Full Stack Developer, Matizalin Technologies, Bangalore and a hands-on session was conducted to learn the basic commands. On the next day, participants were taught to install Apache Spark and to execute Word Count Application using Scala. Following this session, the concepts of Spark SQL were taught with the hands-on session. Finally, the concepts of spark streaming were discussed and the application involving streaming data was shown as a demonstration. Most of the hands-on sessions were clearly presented and handled by our Alumnus Mr. Sasikumar Venkatesh who is currently a Data Engineer, at Matizalin Technologies, Bangalore.

The entire workshop was completely packed with variety of interesting technologies along with detailed hands-on sessions. The workshop was really very useful for me.

Dr. B. Prabavathy,
Assosiate Professor/CSE

WORKSHOP ON IMAGE AND LANGUAGE PROCESSING USING PYTORCH (ILP-2018)

Two days national level workshop on Image and Language processing using PyTorch (ILP-2018) was organised by Department of CSE, coordinated by Dr. C. Aravindan,   Dr. D. Thenmozhi, Dr. P. Mirunalini, Dr. J. Bhuvana during September 26-27, 2018. Totally 35 participants had attended the workshop. Participants include research scholars, faculty from other institutions and students of SSNCE. Two days are packed with equal emphasis to theory and hands-on sessions.

The workshop started with the Introduction to Deep Learning- An overview of principles, challenges, architectures, and tools by Dr. C. Aravindan, Professor, CSE. The second session was handled by Dr. B. Ravindran, Professor, CSE, IIT-Madras on the topic Deep Reinforcement Learning. The first day of the workshop ended with the hands-on session on "Introduction on PyTorch" by Dr. R.S. Milton, Professor, CSE.

The second day began with the talk on Image analysis case studies followed by a hands-on session on CNN for image analysis by Dr. P. Mirunalini, Associate Professor, CSE. The second session was a Google hangout session on Sequence to Sequence Architecture - RNN by Dr. Mitesh Khapra, Assistant Professor, CSE, IIT-Madras. The last session of the workshop was on Language processing.   Mr. B. Senthil Kumar, Assistant Professor, CSE gave a talk on Sequence to Sequence Architecture - LSTM followed by Text analysis Case Study using PyTorch with hands-on by Dr. D. Thenmozhi, Associate Professor, CSE.

Workshop Coordinators
CSE Dept

CONVENTIONAL MACHINE LEARNING (ML) TO DEEP LEARNING (DL) FOR SPEECH, IMAGE AND TEXT PROCESSING

Dr. S. Kavitha, attended a workshop on "Conventional Machine Learning (ML) to Deep Learning (DL) for Speech, Image and Text Processing" during 16– 18 August 2018, organized under IEEE Signal Processing Society - Madras chapter in association with Department of ECE, SSN College of Engineering. The objective of this workshop is to convey and discuss the change from machine learning to deep learning on various domains such as speech, text and image processing.

In the first session, Dr. P. Vijayalakshmi, has given an overview on "From features to modelling". Followed by Dr. T. Nagarajan, addressed the importance of "Supervised and unsupervised learning techniques for speech processing". The afternoon session was handled by Dr. B.Bharathi on "DL algorithms for recognition engines", with a demo on converting a speech signal to spectrogram image and classifying using Convolutional Neural Network (CNN).

The second day first session was handled by Mr. Karthikeyan Padmanaban, Tata Elxsi on "DL infrastructure in cloud". In the next session, Dr. L. Sobha, AUKBC, delivered a talk on "From rules to statistics for Machine Translation". The afternoon session was handled by Dr. N. Ananad Kumar, NIT on "CNN for text analysis". The last session was a demo session on "Machine Translation" by Ms. K. Mirnalini, Research Scholar, SSNCE.

The third day forenoon session was handled by Dr. Chadra Sekhar on "Deep learning models". The next session was handled by Dr. Masila Mani on "Image quality metrics". The afternoon session was handled by Dr. Madhvan Mukund, CMI on "Python programming for ML". The next session was a demo on "Image processing using DL algorithms" by Dr. P. Mirunalini, SSNCE.

Dr. B.Bharathi Asso. P/CSE and Dr. P. Mirunalini, Asso. P/CSE Hadling the respective sessions

NS3 WORKSHOP

I have attended the National Level Workshop on Simulation and Emulation of Self Organized Networks – NS3 at Kongu Engg College, Erode during 16/08/2018–18/08/2018. Here are few words about NS3.

NS-3 provides features not available in NS-2, such as an implementation code execution environment (allowing users to run real implementation code in the simulator). NS-3 provides a lower base level of abstraction compared with NS-2, allowing it to align better with how real systems are put together. Some limitations found in NS-2 (such as supporting multiple types of interfaces on nodes correctly) have been remedied in NS-3. The workshop focused on the various aspects of Network Simulator (NS3) such as simulation of wired, wireless networks. The technical details about the Wi-Fi module, output analysis and graph generation were discussed. The significant part was the new protocol development in NS3 and embedding the new patch into NS3. The hands-on session was very useful. This kind of meeting people working in NS3 gave exposure to various developments of the networking area.

Ms. S. V. Jansi Rani
Assistant Professor, CSE

COMPUTING 101: A BOOT CAMP FOR COMPUTER SCIENCE

A two-day boot camp for first year Computer Science students, "Computing 101" was organized on the 7th and 8th of September by Dr. Chitra Babu, HOD, CSE along with Ms. Angel Deborah, Mr. Balasubramanian, Mr. Sarath Chandran and Ms. Priyadharshini. The first day of the workshop began with an enthusiastic talk by Dr. R. Ramanujam, Professor, Institute of Mathematical Sciences (IMSc). He briefed the students about identifying the possible patterns in a given 2D space and problem solving. The second day started with the talk by Thamizhnambi A, Shreyas Gopal, Siddharth Divi, Sudha Parimala R G and Shakthi Uma Maheswari of final year. They talked on club activities, innovation, IFP, paper presentation, placement preparation, higher studies, internships and hackathons.

The first-year students were divided into two batches and the various events were conducted in the CSE Seminar hall and in the CSE labs parallelly. Three events were conducted in CSE Seminar hall. It includes Triple Treat [Searching and Sorting], Learning from Experience and Fill the gap. Pranav Ram and team introduced triple treat event to the students. They were divided into groups and were encouraged to come up with their own searching and sorting strategies. At the end of the event, Dr. Chitra Babu, HOD, CSE and Ms. S. Angel Deborah discussed about the various strategies in it. After triple treat students were introduced to "Learning from Experience" by Dr. R. S. Milton, Dr. T. T. Mirnalinee, Ms. S. Rajalakshmi and Ms. M. Saritha. The students were given troop placement and currency grouping problems to be solved in groups. This event helped the team to introduce the concept of clustering and classification in machine learning. During the afternoon, Edison and Geetika introduced the event named "Fill the gap". At the end of the event Dr. Chitra Babu, HOD, CSE explained the concepts of distributed computing involved in the game.

Lines and loops, analytical puzzles and thunkable were conducted parallel in PG lab, Software Engineering Lab and Windows Programming Lab. Lines and loops helped the students to understand how to give instructions in a precise manner. Problems in analytical puzzles were explained by Nanda, Praveen, Pooja of second year and Tejas of third year. Harshini, Logesh and team introduced thunkable to first year students. Students of first year were excited to develop their own mobile application using thunkable.

COMPUTING 101: A BOOT CAMP FOR COMPUTER SCIENCE

THE MAN WHO CAPTIVATED MINDS WITH NUMBERS

The faculty and students of the computer science department organised a two day 'Boot camp' for their freshers on 7th and 8th September, 2018. All the freshers of the CSE department were invited to the mini auditorium. Generally the students pull their pillows and blankets to snooze off to college speeches, but to their surprise, this speech was different. A humble figure in kurta walked up to the podium. He wrote his email ID on the whiteboard and asked the audience if they were able to see it. Why did he give his e-mail? The audience wouldn't know why until the end of the speech.

Then he went on to puzzle the students' minds with a pictorial math problem. With their minds challenged, the students got on to solving it right away. Some pulled their notebooks out and started working it out. When some tried to communicate the answer to Prof. Ramanujam, through their inability to communicate efficiently, an important concept of computer science was learnt, "protocol". Protocol is a set of agreed rules for communication between the sender and the receiver for efficient communication. After multiple attempts by the students and with a hint from Dr. Ramanujam, the problem was finally solved.

After this, the initial problem was further developed to make it more complicated. Dr. Ramanujam, asked the students to e-mail him if any of them find a solution to his last question.. Then he taught them how to look for patterns and solve problems that initially seems complicated. This showed them how fascinating and challenging the next four years of life would be and left them with a satisfied aftertaste as they left the mini auditorium.

Sachin Krishan T
I year CSE

SENIORS GUIDE TO FRESHERS

The Department of Computer Science and Engineering conducted the annual workshop for the freshers **Computing 101 - A Boot camp for Computer Science, 2018 edition**. The initiative proved to be an enriching experience and gave the freshers an opportunity to learn about the department activities. On the second day of the workshop, seniors of final year recounted their experience with the various department activities and guided the freshers through the opportunities available on campus to enhance their technical skills and the best activities to track and engage in to maximize their college experience.

The first topic of interest discussed was Competitive Programming. Competitive programming was distinguished from hackathons and various resources that help hone the required skills along with details of competitions to look forward to were mentioned. The next topic traversed the tech clubs of the college, including the coding club, IEEE student chapter as well as the provision to pursue research projects through the IFP (Internally Funded Projects) programme on campus with faculty. The prospect of higher studies was also addressed and several tips on building a comprehensive profile was detailed for universities abroad and within the country. The seniors went on to explain that the preparation for placements begins from the very first year itself. They stressed upon the importance of understanding concepts, securing internships for the resume and to try and follow a company specific preparation approach. Several professional associations like ACM Student Chapter, ACM - W Student Chapter, CSI Student Chapter and their role in promoting industry interaction was explained. The final topic highlighted the importance of research and development and its link with entrepreneurship. At the end of the session, the contacts of the various clubs, associations and student speakers were displayed so that the audience could reach out to them.

The workshop not only proved to be an enriching experience for the freshers but also gave them bragging rights as CSE was the first and only department to give such an engaging and comprehensive orientation.

Nivedhitha D.
I year CSE

ARTIFICIAL INTELLIGENCE (AI) & MACHINE LEARNING (ML) CONCLAVE

Prof. Bhaskar Ramamurthy, Director IIT Madras inauguated the AI and ML conclave organized jointly by the Robert Bosch Centre for Data Science and AI(RB-DSAI) and LatentView Analytics. Mr. Santhosh Mishra, Commissioner of e-Governance and CEO, TN e-Governance agency delivered the inaugural address. Mr. Venkat Viswanathan, Chairman and founder, Latentview Analytics

discussed industry usecases such as Revlon beautycare products where they ML is being used to predict the fashion trends. Folowed by that, Prof. B. Ravindran, Head of RB-DSAI discussed briefly the current research trends in AI and ML. Ms. Anna Roy, Advisor, Niti Ayog narrated how collaboration can be forged between industry and academia in the area of AI.

The final session before lunch was an interesting panel discussion on "Skills to succeed in an AI-driven digital world". After lunch, we saw few demos that were displayed by companies such as Gyan Data, BuddiHealth, FaceTagr etc. After that there was a session on TensorFlow by Ashish from Google. Lastly, we attended a session by Dr. Mitesh Kapra on "Deep Learning for NLP" which was very good.

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Dr. Chitra Babu
HoD/CSE

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From L-R:

Mr. Rajan Sethuraman, Chief People officer, Latentview Analytics

Maheshwaran Kalavai, Chief Data and Analytics officer, TVS Motor

Josh Foulger, Managing Director and Country Head, FoxConn

Dr. Nandan Sudarsanam, Department of Management Studies, IIT Madras

Dr. S. Swamynathan, Professor, Department of IST, CEG, Anna University

TEACHERS' DAY CELEBRATION   - A GLIMPSE

Mr. K. R. Sarath Chandran and Dr. D. Venkata Vara Prasad received the First and Second Prizes respectively for the Best Faculty CSE from Mrs. A. Vennila (Tamil Poet, Writer and Teacher) for the academic year 2016 – 2017.

Dr. R. Kanchana and Ms. S. Manisha received Second Prize for the anthakshari event as part of teachers' day celebration held on 29 August 2018.

Dr. T. T. Mirnalinee received CTS Best Faculty award from President, SSN I.

Dr. R. S. Milton delivering the vote of thanks.

APPLYING MACHINE LEARNING TO SUPPORT HUMAN LEARNING

ACM India Chennai Professional Chapter's Expert Lecture on "Applying Machine Learning to support Human Learning" by Dr. Manish Gupta was held on 12th September 2018 at 5:30 pm in IIT, Madras.

After the long one and a half hour travel to IIT and a steamy samosa to quell our hunger, we entered the Aryabhatta Hall in the CSE Department of IIT Madras, primed and curious to learn about how Machine Learning finds application in the field of Human Learning. For those who don't know much about Dr. Manish Gupta, let me tell you that his bio would inspire you to dig into your infinite capacity to learn and grow. Dr. Manish Gupta is not only the co-founder and CEO of VideoKen, a video technology startup but also the Infosys Foundation Chair Professor at IIIT Bangalore. Previously, Dr. Manish has served as Vice President and Director of Xerox Research Centre India and has held various leadership positions with IBM. He has also led the team developing system software for the Blue Gene/L supercomputer. As this page wouldn't be enough to list all his achievements, let me get into what his talk was all about.

The talk started with acknowledging the immense growth and availability of online courses and how it could be made a valuable support to assist formal learning. If many educational institutions, as well as corporations, start making full use of this widespread resource it could vastly improve the effectiveness of learning and education. Going on to talk about the various challenges in online learning, Dr.Manish Gupta then introduced the learning platform called VideoKen. Understanding the need for personalized learning, the platform helps you effectively search for learning videos on any topic, navigate through them, curate playlist of video clips, and share them. Hearing Dr. Manish talk about how Machine Learning was used to bring in many features such as Table of Contents (index) and Phrase Cloud (glossary) - like a digital textbook and gaining insights from the learner's interactions with the videos, was very engaging.

The talk was a reminder of the infinite possibilities where Machine Learning could find Application in today's world. Thus, the talk was not only absorbing but it also left us pondering over the ride back.

Shrinithi Radhakrishnan

II Yr C Sec

CONTRIBUTIONS OF CERF AND KAHN

ACM India, Chennai Professional Chapter Turing Series Talk 13 on "Contributions of Cerf and Kahn(2004 TA Winners)" by Prof. Krishna Sivalingam was held on October 5, 5.30 PM at Aryabhatta Hall, Department of CSE, IIT Madras.

The talk was on the design and implementation of the Transmission Control Protocol and Internet Protocol (TCP/IP). It's true that both Vinton Cerf and Bob Kahn made many of their own notable accomplishments, it was their partnership that drove the creation of the TCP/IP protocol as one of the core components of the Internet. Initially, the TCP was meant to be a replacement for the ARPANET's NCP protocol. Later, TCP/IP laid the groundwork for open-architecture networking, a concept that enables any computer and network to freely talk to another, despite the hardware or software they use on their particular system. The talk gave some details about the main components of the internet architecture like gateway, fragmentation, address space, packet format, reliable transmission, etc.

CONTRIBUTIONS OF ROBERT TARJAN AND JOHN HOPCROFT

ACM India Chennai Professional Chapter organized the Turing Series 12th talk on "Contributions of Robert Tarjan and John Hopcroft" by Prof. Venkatesh Raman, Institute of Mathematical Sciences on 27th September, at Ramanujan Auditorium, Institute of Mathematical Sciences.

COMPUTE 2018

The ACM Compute International symposium was inaugurated by the AICTE chairman Dr. Anil Sahasrabudhe. He talked about the development of model curriculum by AICTE and he also emphasized that every university is free to adapt that to its own needs. He also mentioned that the students should move away from rote learning and should acquire skills necessary to apply the concepts practically. ACM India President Dr. Abiram Ranade talked about how an introductory programming course should be taught in an interesting way to students. Dr. Pankaj Jalote from IIIT Delhi talked on how learning cannot happen without active engagement of students and also made a strong statement that there is no meaningful teaching without students learning from it.

Around 10 different ACM student chapters participated and presented their annual activities during the Chapter summit that was organized in the evening. We also had an elaborate meeting the ACM India Executive director Dr. Hemant Pande regarding how the visibility of ACM events can be increased and more participation from industries can be sought.

Next day, the ACM India immediate past President Dr. Madhavan Mukund elaborated the various initiatives that has been taken by ACM in the past 2 years such as CSPathshala, Summer schools etc. Dr. Alison Clear from Auckland, Newzealand provided insights on key features of the CC 2020 curriculum building effort. There were three invited talks from Mr. Venkatesh, head of the ACM education committee and iSIGCSE, Dr. N. S. Kumar from PES University and Dr. Anantha Narayanan from Amrita University.

There were 16 posters which were displayed by students of various colleges all over India. These were selected for finals among 100 posters that were submitted initially. Three best posters were selected based on three reviews for each poster. Finally, there was an interesting panel discussion on "Evolution of Programming" and how programming has changed over the years.

Dr. Chitra Babu
HoD/ CSE

NPTEL COURSE
PROBLEM SOLVING THROUGH PROGRAMMING IN C
– MY EXPERIENCE

I am **V. Sanjay Thiruvengadam** from **II year Computer Science Department of SSN College of Engineering**.

On 26th January, I registered for the NPTEL course "Programming in C" as recommended by my subject teacher Dr. K. Vallidevi. This course was conducted by IIT Kharagpur and Professor in-charge was Prof. Anupam Basu.

This course started with basic concepts such as flowcharts, pseudocodes, compilation process, syntax and semantics and errors. Then, they gradually moved on to other concepts. The explanation given in the videos were very good and were easily understandable. Prof. Anupam Basu took a lot of time and taught every concept with clarity.

I watched all the videos and did all the assignments. I understood the concepts very well and loved solving the problems given in the assignments. Only when we are clear about the concepts, we could answer the questions correctly because the options given in the MCQs were very tricky.

Initial few assignments were even discussed in the class by Vallidevi madam, to make the students in-line with the assignments and to inculcate interest among the students. After a few weeks, programming assignments were given. I had to write programs instead of solving MCQs. This was also very interesting. The course helped me in my college studies as well.

As the course progressed, my confidence to solve problems boosted and I became bold enough to face any problem in C. I and my friends had a nice time discussing the assignment solutions. Every week after the due date, I used to be eager to see the scores I scored in the assignment.

I successfully finished all the 12 assignments in the course. I prepared well for the final exam. The final exam was on 29th April. The exam was for 3 hours. I was confident about

the exam. I really did well in the exam. The questions were very easy and it tested our conceptual understanding.

Finally, the results came and I secured 24/25 in the assignments and 73/74 in the final exam. So, I got 97% and I was in the top 1% of the candidates and I received a gold medal.

Overall, It was a very good experience.
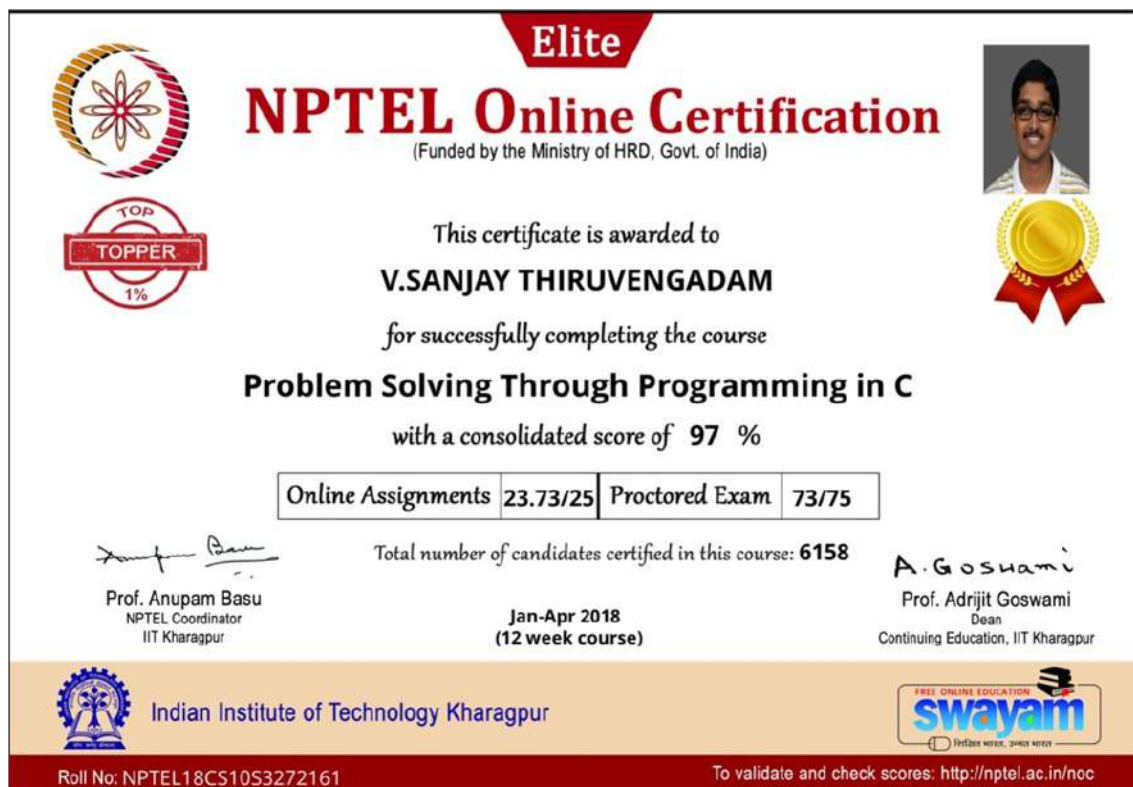
Dr. K. Vallidevi and Ms. M. Saritha have received the certificate of appreciation in recognition of their role as MENTOR for the NPTEL online certification course on Problem Solving through Programming in C. Altogether there were 6 toppers, who have scored marks more than 90%.

Dr. K. Vallidevi

Ms. M. Saritha

BITS AND BYTES

'Bits and Bytes' set colleges abuzz throughout September. This hackathon event offered Engineering pupils a chance to innovate in 14 themes that ranged from health to artificial intelligence. About 436 abstracts piled high amongst with 34 made their way to the on-spot 30-hour finals. "Classification of Tuberculosis Using Convolutional Neural Networks" submitted by our college trio- Harrinei K., Harshana S. and Jahnavi Srividya, II year, CSE-A was one of them. The team cleared the initial rounds and trudged into the finals, under the skilful guidance of Dr. S. Kavitha and Dr. B.Bharathi of our department. The final round was held at Sairam Engineering College on 17th and 18th of September. 4 panel discussions followed, each hitching the project up a few paces in regards of efficiency, marketability and versatility. By the end of the allotted 30 hours, our team had a web-app that enables the patients and doctors to input CT Scans to have them thoroughly analysed and classified into one of the 5 categories of TB was ready. This project fetched our girls, "The Best Women Team Award".

From Left to Right (SSN Students): Harrinei K., Harshana S., Jahnavi Srividya

INDUSTRIAL VISIT

On the 14th of August 2018, the third year students of CSE-B were taken for the much awaited industrial visit. The students accompanied by Ms. A. Beulah and Mr. B. Senthil Kumar, went to Manatec Electronics. It was a 3 hour journey to the Manatec Electronics, located in Puducherry. Established in 1987, the company focuses on Mechatronics and is into designing & manufacturing of Garage Equipment in India with 100% indigenous technology.

The students were given an initial briefing about the 3 main products - Wheel Aligner, Wheel Balancer and the Pollution Control Equipment, following which they were allowed to see the equipment along with a detailed explanation of the working. The overall procedure in manufacturing a product followed the company was explained- After the Marketing department acquires the order, the required material is purchased, followed by a quality check. Once the production is completed, another quality check is performed. The Total Quality Management(TQM) which includes the daily routine management, problem data bank, 5S and the Quality Control Circle if followed strictly in the company to ensure performance and efficiency. In the Wheel Balancer, the input parameters such a diameter of wheel, distance from machine is entered and the wheel is rotated. The output indicates the additional weight that has to be added to each wheel to maintain balance, thus increasing the lifetime of the wheel. The Wheel Aligner captures the internal angles in the vehicle, thus ensuring tire-safety and smooth driving. It was interesting for the students to see a demo of how the equipment works. The Pollution Control Equipment indicates the nature of the smoke released by vehicles using a smoke meter and an Echo gas analyser.

One of the biggest achievements of Manatec is the JUMBO 3D Wheel Aligner for which the research and development was done in India. On the whole, it was a very enriching experience.

Sarah Mathew
III Yr B-Sec / CSE

LIGHTS OUT PLEASE

Students from Lights Out Please put up the play 'Nadula Konjam Pakkaththa Kaanom' in the finals of Stella Theatricals on the 7th of October, and they won the Best Play award and the Audience Choice award. Akshaya Ranganathan from CSE third year won the Best Actor (Female) award, and Tejas Sivan from CSE third year won the Best Actor (Male) award. The club also won the Best Playwright award, completing a clean sweep of all the prizes.

LIGHTS OUT PLEASE - FESTEMBER

Harini Ragavendran(2nd year) and Stephen Bennett(2nd year) were part of the cast and Harini Ravi(2nd year) and Amritha S.(2nd year) were part of the crew for the LOP play 'Voices', which went up at Festember (NIT Trichy) theatre competition. The team bagged the best actor, best director, best set design and overall best play prizes.

LOP put up a play titled 'A.L.I.C.E.' for its annual odd-semester public show under CREA-Shakti's College Theatre Initiative on the 9th of September. Sundararaman V from the fourth year CSE department was one of the directors, and the cast included Kavya Jaganathan(2nd year), Aparna K(2nd year), Nakul Krishnan(2nd year), and Avi Krishna Natesan(2nd year). The CSE students in the crew were Amritha S., Harini Ravi, Shraddha Mohan, Sanjay Pokkali, and Kailash(4th year). The show was very well received and the individual performances were lauded.

LIGHTS OUT PLEASE-A.L.I.C.E.

LIGHTS OUT PLEASE - NADULA KONJAM PAKKATHTHA KAANOM WINNING MOMENTS

ACE INAUGURAL 2018

ACE Inaugural happened on 20th August 2018 in mini auditorium.The event began with a welcome address by Sharan Sundar, President of ACE. Haritha (CSE III year) sang the prayer song, following which Dr. Chitra Babu, the Head of our Department lighted the Kuthu Vilakku and all the board members of ACE followed suit. After all were seated, Soundarya Venkatesh (CSE IV year) introduced the board members to all the students and faculty of the department that were present.

Then, our HOD addressed the students about department activities and placement stats. She then went on to brief the audience about trending fields in computer technology such as Artificial Intelligence and Machine Learning, outlining the achievements in each of those fields. She concluded by wishing the students success in this semester's endeavours. Next, the department club representatives came on stage to brief the audience about recent activities in their clubs and future plans. Soundarya then went on to introduce the event coordinators for Invente in our department this year.

Next on the agenda was to introduce all the event heads for the 8 technical events and 2 non-technical events to be held at the department for Invente this year. Each of the event heads came on stage to describe their events and what they would need volunteers for. They also provided their contacts for juniors to volunteer and be part of the organising team. Following this, the decoration team came on stage to encourage students to pitch in their ideas for the theme for our department. Volunteers and organisers from all years pitched in for the following: Deco Work, Purchase for deco work, Design of posters for events, Design of banner for department, Printing of banner, Purchase of event requirements, etc. Without several hands contributing for all the above, it would have been impossible to make this event as beautiful as it turned out to be. Our heartfelt thanks to every person that was involved.

INVENTE 3.0

The INVENTE inaugural on 21st September 2018, 10.30 am started off with a welcome address by Yashaswin who briefed about Invente 2k18. That was followed by the Invocation song Thamizh Thai Vazhthu by Lalithalakshmi. Then videos about SSN Institutions were played to the audience.

The dignitaries, Chief guest Dr Gangadharan, Associate Director Liquid Propulsion Systems Centre, Mrs. Kala Vijayakumar, President SSN Institutions, Dr. S. Salivahanan, Principal SSN College of Engineering and Dr. Chitra Babu, HOD Department of Computer Science and Engineering moved to the stage. The chief guest was welcomed with a memento and was felicitated by Mrs. Kala Vijayakumar.

INVENTE 3.0

Following which, Principal sir delivered his speech to the audience. Then the President, Mrs. Kala Vijayakumar addressed the gathering and she highlighted the success of the previous editions of Invente, which was conducted together by all the departments, contrary to the department specific symposiums which were in practice earlier. It was followed by the Chief Guest's note.

The Invente 3.0 magazine "Tech Vibe" was released on stage by the Chief Guest and other dignitaries. Arun Sathianarayanan, Second year, Department of Mechanical Engineering was felicitated with a cash award of Rs. 50,000 for winning bronze in Asia level skating-dance championship.

Sharan Sundar, President, Department of Computer Science and Engineering proposed the vote of thanks. It was followed by National Anthem. Then, a photoshoot was conducted with the President, Chief Guest, Principal, HoDs, and department Presidents. Audience from both SSN and other colleges graced the occasion.

INVENTE 3.0 - CSE

The department of CSE conducted the following events during INVENTE 3.0: Codolympics, Poster Design, Code Relay, Hacker's Asylum, Paper Presentation, YeSQueueLuck, Amazing CryptoRace, Degree In a Day, Sci-Tech Quiz and Treasure Hunt.

Codolympics was the flagship event of CSE. It had three rounds – one pen & paper test, followed by two online coding rounds, hosted on HackerRank. This event had the highest turnout with approximately 110 teams of 2 (or) 3 people each. The winning teams also bagged an internship at Admatic. The event "Code Relay" is the first edition of our newest coding event . Participation in teams of 3 was mandatory. First round was a pen & paper test with 45 mins to solve algorithmic challenges. Round 2 saw eight teams competing on CodeChef platform, with 3 problems to solve between the 3 teammates. After every 20 mins, problems were swapped between the teammates and they had to continue on the other's work. Participants of the winning team received an internship at Sigaram Technologies.

Likewise, "Hacker's Asylum" is a new addition to CSE events for Invente 3.0. The winning teams were offered free access to the Ethical Hacking course on Udemy. In Paper presentation, 11 papers were selected for the presentation round. YeSQueueLuck involved one of the major domains in CS – Database Management Systems. This was one of the events that attracted the most participation on day 2. The Amazing CryptoRace event is a replication of the reality show "The Amazing Race" with a cryptographic twist. First round was a pen & paper test for puzzle solving and deciphering. Second round had the participants take up tasks and solve puzzles to find clues for the next task. "Degreal participventatio. Students were tested on Aptitude, Logical Reasoning and basics of CS domains in the first round. Second round included tests on CS subjects such as Networks, DBMS, Operating Systems and Computer Architecture. Final challenge was to solve algorithmic challenges on pen & paper.

Treasure Hunt and Sci-Tech Quiz were non-technical events that had active participation from all students regardless of year and department. Approximately 400 people came to participate in the department's events on both days.

INVENTE 3.0 - CSE

INVENTE 3.0 - CSE - DECO WORK
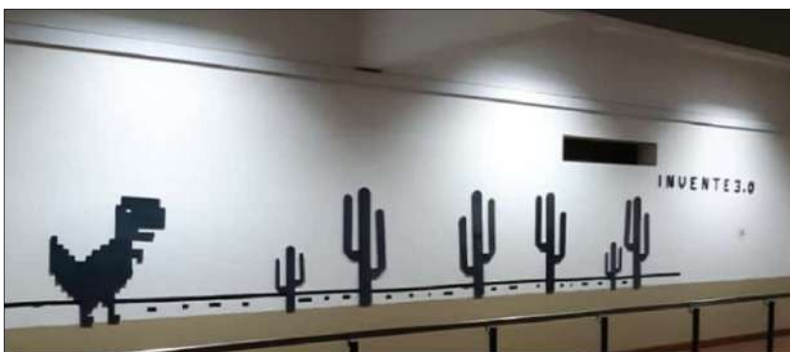
GRAB_IT– MOCK INTERVIEW

The mock interview is a really nice initiative. It gave good exposure, experience and helped me improve. It helped me attend the actual interviews with confidence. We were first asked for preference of technical (coding) or management interview. We were then assigned to a person and were given his contact number. I was assigned with Keshav Reddy and was told to contact him and fix up a suitable time for the session. The mock interview was held on 16th August at 8 pm on a hangouts call. I was asked to share my resume prior to the interview session. The interview went on for about one and a half hours and I was asked to solve a programming question. I was asked to type the code for the given problem statement on a shared google docs file and was asked to explain the logic. I was given some sample inputs and asked to walk-through my program to demonstrate its functionality.

Keshav pointed out the flaws and the corner cases that I had missed out upon. He explained how the complexity for the program was calculated and how my program could be optimised. He explained that neat and error free code was very important and elucidated how my coding style could be improved. He also told me how the time taken for coding was an important factor as most interviews had two questions to be solved in the same time span and advised me to work on the time factor. He recommended the book "Cracking the coding interview" and told me to work out problems from the same. He further asked what type of jobs I was looking out for and gave me advice accordingly. He read through my resume and suggested some alterations on the way it was presented. He also asked me some resume based questions like explaining my projects. He also told me why I was not able to crack through to the next round on that day's placement interview with Goldman Sachs.

On the whole, the mock interview session was really useful and interesting. I found it to be at par with the actual interview and the experience gave me a lot of direction and motivation. It helped me concentrate on what I lacked and made me perform better in the forthcoming interviews.

I would like to thank ACM - W Student Chapter of SSN for organizing this mock interview as this gave an opportunity to gain an exposure on the actual interview process, gauge our abilities and hone our skills.

Kirtana R N

IV year

LINUX INSTALLATION PARTY

Linux installation party was organised by ACM & ACM-W student chapter in Software Engineering Lab on 23rd August 2018. The main part of this event was to install Linux operating system onto the participants' system. One reason to have conceived this kind of an activity was to create awareness about Free and Open Source software in general. There was one another purpose too, which is many of the course laboratories use the GNU/Linux Operating System and it would be useful for them to have it in their system.

Prior to the event, we conducted a short survey to gauge the pulse of the participants. For the question, what is stopping them from installing Linux on their laptops, the answer given by majority of the participants was, they had apprehensions that the entire system might crash during the installation process. While there is some truth to it, one needs to be very careful whilst installing an OS.

On the day of the event, we saw enthusiastic participants from multiple departments turn up. The team of volunteers got started with the installation process. Most of the participants wanted to go with the Ubuntu distro of Linux. Their preferences on the memory and RAM sizes to be allocated were duly noted and the same were applied by the volunteers. Meanwhile, the methodology of partitioning the hard disk, creating a bootable USB from the ISO file of the OS, and installing alongside Windows was explained to the participants, so that they are in a position to do it by themselves if the need arises. The event was welcomed by the participants and the chapter hopes to conduct this next year as well. We would like to thank our HoD and Sujaudeen Sir for their support and the volunteers for helping us to conduct the event in a smooth manner.

Sudha Parimala R G

IV year

DESTINY REACHED

Name	Company
Kirtana R N	Amazon Web Services
Sailesh Kumar Gajesh	Thought works
Srikkanth S	
Dharmisetty Pavan Tejaa	Yamaha
Mahima M	Viasat
Godi Reddy Sreenivas	LTI
Balasankar N	
Priya Lakshmi T	LatentView
Tahseen Fathima I	Freshworks
Reshma U	
Shreyas Gopal	Admatic
Kirtana R N	Trimble
Pooja Priya V	
Priscilla Andrew	
Sudarsan S	PayPal
Kavya R	
Vidya R	
Soundarya S	Infosys - Systems Engineer Specialist
Kripa K	CaratLane
S Aakash	ChargeBee
Priyadarshini J R	Citibank, Caterpillar
Seethalakshmi B	Coda Global
Kaushik D	
Ashwin Krishnan G	FourKites
Venkatesh S	
Sangeetha V S	Sapient
Vasanth Kumar E	
Siddharth Divi	
Akash Milton M	Sigaram Technologies
Harieharaan D	Sirius Computer Solutions
Charan M	Xome, Citibank
Harish R	ZOHO
Madhu Rata G	
Shashank A M	
Varun Suresh	
Aishwarya Ponnammal M	ZOHO, Citibank
R Vivek Narayanan	
Keerthana Priya S	Temenos
Sharmadha S	
Suryakanth M	
Tarun R K	

DESTINY REACHED

Name	Company
Abisheik S	Infosys
Anusuya S	TCS
Bhuvaneshwar E	Infosys
B Laxmaan	CTS
Brindha P	TCS
Sathiya Narayan C	CTS
Dharun R	CTS
Dhinesh	Infosys
Divya R	TCS
Harikrishnan M M	Infosys
Induja S	TCS
Kannathal S	CTS
Karthika Swarnamalli R	CTS, TCS
Kishore M	TCS
Karnika Saara K	TCS, Infosys
Malack Mehnaz Mariyam	CTS, Infosys
M Anirudh	CTS
Mukilan A R	CTS, TCS, Infosys
R Hemapriyalakshmi	CTS, TCS, Infosys
Sabarish S	CTS
Sailesh Kumar Gajesh	CTS, Infosys
S Aakash	CTS, Infosys
Sandya M	TCS, Infosys
Sangeetha	Infosys
Sarveswari Sree N	Infosys
Sharani R S	CTS, Infosys
Shivani K	CTS, Infosys
Shruthi K	TCS
S Keerthana	CTS, TCS
Soundarya G	CTS, Infosys
Soundarya S	TCS
Srikkanth S	CTS, TCS
Vignesh Kumar V	CTS, TCS
Shalini K	TCS
Sharaj J	TCS, Infosys

APPROVED INTERNALLY FUNDED STUDENT PROJECTS 2018 - 2019

S.No	Name and Year of the Students	Project Guide(s)	Title of the Project
1	S. Logeswari C. Malavika S. Marimuthu III Year	Dr. T.T. Mirnalinee Dr. J. Bhuvana	IOT based smart agriculture
2	Rohit Midha Sainath Prasanna V. Srinath II Year	Dr. T.T. Mirnalinee	Facial-Recognition attendance manager (FAM)
3	J. Jay Vishaal Stephen Niranjan Bennett Deepthi Prakash Sourav Ghosh II Year	Ms. S. Angel Deborah Mr. K.R. Sarath Chandran	Virtual fashion mirror
4	S.S. Ramachandran V. Sasidharan IV Year ECE B. Iswarya III Year ECE Hemanth Himanshu Agarwal II Year CSE	Ms. K. Lekshmi	Solar water seer
5	Amogh Gupta K. Aparna H. Ferran Sulaiman II Year	Ms. S.V.Jansi Rani Ms. R. Priyadharshini Dr. B. Bharathi	Voice enabled personal assistant robot for the visually impaired
6	K. Harrinei S. Gokul Sahar K. Dinesh II Year	Dr. S. Kavitha Dr. B. Bharathi	Intelligent surveillance and data base management system
7	S. Harshana S. Jahnavi Srividya II Year	Ms. S.V.Jansi Rani Ms. R. Priyadharshini Dr. B. Bharathi	Weed detection and removal by robot for precision agriculture - Using image processing techniques
8	M. Edison A. Haritha III Year	Mr. N. Sujaudeen Ms. S. Lakshmi Priya	Smart electricity meter

APPROVED INTERNALLY FUNDED STUDENT PROJECTS 2018 - 2019

S.No	Name and Year of the Students	Project Guide(s)	Title of the Project
9	Ehtesham Hussain S. Dhinesh B. Harish II Year	Ms. K. Lekshmi	Smart vision
10	J. Santhosh S. Santhosh R. Sree Hari M. Sri Krishna K. Vignesh Hariharan II Year	Ms. S. Angel Deborah Ms. S. Rajalakshmi Ms. A. Beulah	Smart wildlife vehicle collision detection system
11	K. Dhivyaa S. Dhulasipriya C. Monisha V. Praveen Raj G. Senthil Raja III Year	Dr. B. Bharathi Dr. P. Mirunalini	Automated fertigation system
12	V. Varshitha IV Year G. Soundarya IV Year K. Swetha III Year A.J. Poornema III Year	Ms. S. Rajalakshmi Ms. S. Angel Deborah	Child safety wearable device
13	Varshini Balaji K. Sivakami Ujjwel Balwal II Year	Ms. S. Angel Deborah Ms. S. Rajalakshmi Ms. M. Saritha	Fighting forest fires using advanced drone technology
14	Akshay Ramakrishnan Abishek Balaji Amlan Sengupta II Year	Mr. K.R. Sarath Chandran Ms. S. Angel Deborah	Automated residential control system for disabled people using sensors and mobile application

APPROVED INTERNALLY FUNDED STUDENT PROJECTS 2018 - 2019

S.No	Name and Year of the Students	Project Guide(s)	Title of the Project
15	Pranav Raveendran M. Mohan Sundar Kevin J Thelly II Year	Ms. S. Rajalakshmi	Smart attendance and student/teacher companion using beacons
16	A. Vasantha Raman S.L. Sharrik Krishna I. Sitharthan V. Sai Chitti Subrahmanyam II Year	Dr. B. Prabhavathy Ms. S. Angel Deborah	Smart public distribution system
17	Shivani Seenivasan S. Sharon Julia II Year	Mr. K.R. Sarath Chandran Ms. S. Angel Deborah	Face recognition door
18	S. Srinethe P. Sharath Chander J. Soundarya III Year	Dr. D. Thenmozhi	Rescue bot using live human detection and facial recognition
19	D. Logesh M. Akhilesh P. Kaushik II Year	Ms. S. Lakshmi Priya Mr. Sujaudeen	Sixth sense technology with gesture control

TECHNOLOGY WON'T REPLACE TEACHERS...

BUT TEACHERS WHO USE TECHNOLOGY WILL PROBABLY REPLACE TEACHERS WHO DO NOT.

UNIQUE TEACHING RESOURCES
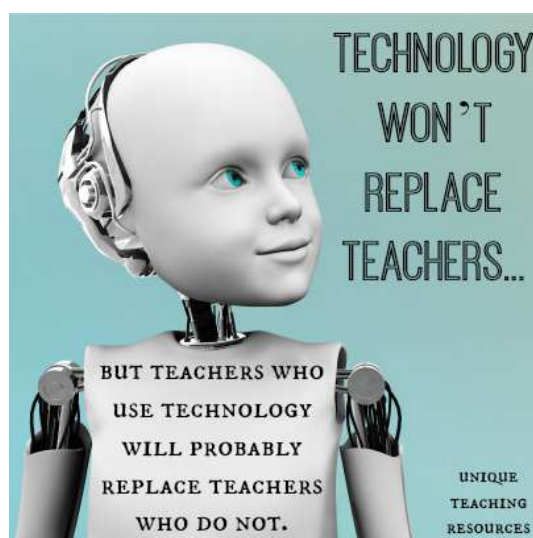
ADMATIC TECHNOLOGIES - INTERNSHIP

I started interning at Admatic around the middle of June. It was a fun and interesting experience.

Importantly my internship is not yet entirely finished, as I work there part-time and I've also agreed to a non-disclosure agreement. Hence, I'll run through the low-level functions I performed and technologies I worked with.

Some of my work concerned image processing using Python and OpenCV. We worked on object detection and tracking. We also used the above tools to generate specific datasets we needed for further work. We also worked closely with AR and developed solutions concerning Computer Vision and Augmented Reality in the Education sphere.

Apart from this, I also took up any general projects that were to be completed. I developed a back-end using Django from scratch for a Web Application that was a part of a product. I also had to do a lot of web scraping for specific datasets that we needed.

Apart from what I have developed, I also learned a lot about some interesting technologies. I learned how to use ElasticSearch and Docker as well as MongoDB.

In conclusion, I think to intern at Admatic was a rewarding experience. It felt like I was contributing to some interesting projects and in return learned quite a lot and gained experience.

Shreyas Gopal
IV Year CSE

SUMMER INTERNSHIP AT GOOGLE INDIA

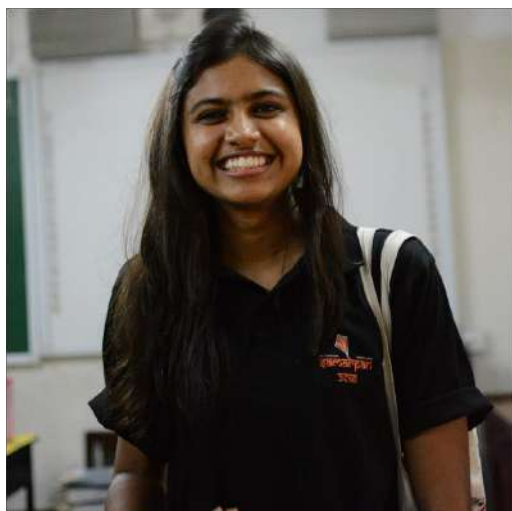Vishal A and Anish Badri R S of the third year CSE have been selected for the summer internship at Google India.

Vishal A   Anish Badri R S

SIDHARTH FOUNDATIONS AND HOUSING LTD - INTERNSHIP

The internship at Sidharth Foundations and Housing Ltd was a period of six weeks, from June 5th onwards. The primary task given was redesigning the landing page of their website. Several additional details such as the compliance of Real Estate (Regulation and Development) Act, 2016 (RERA), and information about 2 completed projects and snippets of ongoing projects was to be added. HTML, CSS, AngularJS and PHP was used to develop the landing page which included pop-ups to allow Location Access, and elementary chatbot which would redirect all queries to the Public Relations Team. After reviewing and verification by the Digital Marketing Team and the CEO, the changes were pushed to the website's corresponding pages.

A detailed analysis of the leads generated from Chat and Email queries was done, and several modifications were made accordingly. The order of the Completed Projects listing was changed, and one project: Sidharth County in Thoraipakkam, which had the highest Call To Action rate, was modified to add more highlights and location centric details. The overall lead generation from mobile users was limited, and therefore a project to improve the User Experience on Mobile Platforms was commenced by the Digital Marketing team.

Tabulation of enquiries was also one of the tasks, and segregation of the data based on projects was achieved. This required collating the walk-in and online queries. A python script was used to do the same, and additional categorical variables denoting the Project Name was added. The data recording and tabulation project were initiated recently, and hence not enough data was available to perform any predictions for the enquiries, and conversion rate to bookings. Documentation for the corresponding DB was written, for further use by the Public Relations team.

R Nidhi Bhandari
IV Year CSE

NEXTGEN FELLOWSHIP PROGRAM

This summer, I got an opportunity to be a part of the NextGen fellowship program, a collaboration between Colorado School of Mines (CSM) in the US, and Citrine Informatics, a bay area start-up in materials informatics. The program was for duration of ten weeks, where I learnt about applying machine learning techniques to a field with ever-growing importance in materials science. Materials informatics aims in utilizing machine learning to better understand the use, selection and thus the processing of materials for their respective applications.

My task involved correlating microstructure and processing variables to predict bending fatigue endurance limits of carburized steel gears. Analyzing the fatigue life of materials is a significant problem in the materials domain and poses a critical design criterion, since fatigue studies provide analysis of materials under repeated stress for a given number of cycles. Data was collected from fatigue experiments which use a Brugger specimen geometry. The Brugger specimen is a cantilever bending beam which under stress simulates the working of a single gear tooth. The extended analysis was conducted on these curated data points to build machine learning regression models based on random forests. I was made to present my work in a poster presentation organized by the NextGen fellowship program.

One of the challenges that I faced during this tenure was with respect to working and applying machine learning techniques in a completely new domain. Being a computer science undergrad, I had little knowledge about materials science. My advisor at CSM, Dr. Kip Findley, was extremely helpful in this regard. He helped me in familiarizing myself with the necessary and granted me opportunities to learn from experiments conducted by PhD scholars at the university. By gaining such access, I was exposed to how cutting-edge materials research was brought about, and it further helped me in understanding the task that was assigned to me. Another challenge that I encountered was with respect to the dearth of data that is present in the materials domain. Each data point would be the result of a series of experiments conducted which require material testing, which is both expensive and cumbersome. Applying machine learning models to a small curated dataset was indeed proving to be a challenge.

As an intern, the university provided a lot of resources and access to facilities such as the library and various labs. I was given a flexible work schedule and access to my office space even during the weekends. Apart from the advisor at the university, I was also presented with the opportunity to work with an advisor from Citrine, Malcolm Davidson. Malcolm was extremely helpful throughout the process in helping me set up a timeline to meet my goals. Furthermore, we could have brainstorming sessions and come up with solutions for the materials problem from a machine learning standpoint.

Citrine was also extremely helpful in funding a four-day trip to California during this tenure. They conducted a workshop at Stanford University and took us around to visit a lot of places in San Francisco and to their office in Silicon Valley. Visiting Stanford and getting to tour around San Francisco was definitely one on my bucket list!

Apart from official work, I had an enjoyable experience at Colorado. My sister was extremely helpful in providing comfortable accommodation and introduced me to her friends from different parts of the country. It was an enriching experience to interact with people from different parts of the globe. Since Colorado is known for its hilly terrain, I made weekend hikes

almost mandatory with my new friends. My sister also helped me tour around Colorado by taking me to other cities such as Denver to get a taste of life in a busy downtown capital, and Boulder to observe the flatirons – iconic mountains with flat peaks.

Overall, I believe that the program was an enriching experience and has provided me with a lot of positive takeaways. Being a first-time traveller myself, it was extremely influential learning about different cultures in work and life, interacting and networking with people and making new friends from different parts of the globe.

Manav Rajiv Moorthy
IV Yr CSE

INTERNSHIP AT UNIVERSITY OF OREGON

This summer I got an opportunity to intern with University of Oregon for two months. During this stint, I collaborated and worked alongside postdoctoral students and professors of the Oregon Network Research Group (ONRG), which was a wonderful experience. My objective was to denoise Internet delay measurements, which was particularly very useful for internet researchers and service providers. Apart from this, I went on to know how PhD differed from master's degree by working closely with students from both streams.

The Internet plays a central role in our daily life, it is absolutely right to say that no technological advancement has offered more benefits than has the internet. As innovations in the Internet continue to evolve, many properties of the Internet (specifically delay characteristics of end-to-end paths) are becoming increasingly opaque. To this end, researchers in academia and industry proposed a myriad of measurement tools and techniques. Despite the benefits of the tools and the datasets, what is critically lacking is a systematic framework to remove measurement noise. The state-of-art denoising techniques are time consuming, labour-intensive and ineffective.

Given my objective and the most recent advancements in the field, I developed an open source framework for denoising internet latency measurements with high accuracy by leveraging recent advancements in machine learning. And I strongly believe that this could open up a bunch of possibilities for internet researchers, service providers and content delivery networks around the globe by making the process easier, in an automated and rapid fashion.

As an intern, I had almost all the privileges that postdoc students from University of Oregon students had: access to high performance labs in the department round the clock, walking in/out of any lectures as I wished, access to library and much more digital content. Apart from this, weekend trips to lakes, hiking spots and other attractions in the west coast of United States with my colleagues were relaxing and rejuvenating. In addition to all this benefits and freedom, weekly meeting with my advisor Dr. Ramakrishnan Durairajan, who directed me in right directions and made sure this intern was an useful and fabulous experience: from endless brainstorming sessions to bugging him for further clarifications when it comes to technical stuff. As the days progressed and when it seemed that I may not complete the major chunk of the project within the two

months, I was not pressurized, rather encouraged to take my own time in fixing things by the advisor which was evident when I completed more than what was expected. I can assure that even a person with modicum capabilities like me can do wonders in such environments.

Working as a research intern in University of Oregon was more like sponsored trip to carry out your research in one of the reputed schools in United States blended with tastes of learning, work-life balance and cultural exchange.

M Anirudh
IV Yr CSE

CLEF 2018 - AVIGNON, FRANCE

CLEF 2018 was the 9th CLEF conference continuing the popular CLEF campaigns which have run since 2000 contributing to the systematic evaluation of information access systems, primarily through experimentation on shared tasks. This year it was hosted by the University of Avignon, France.

The students Nithish B Moudhgalya, Sharan Sundar S (IVth Year) under the guidance of the Professors Dr. C. Aravindan and Dr. P. Mirunalini, represented SSN and also presented, published a paper "Convolutional Long Short-Term Memory Neural Networks for Hierarchical Species Prediction", under the GeoLifeCLEF challenge, LifeCLEF labs.

The GeoLifeCLEF challenge provides a testbed for the system-oriented evaluation of a geographic species recommendation service. The aim is to investigate location-based recommendation approaches in the context of large scale spatialized environmental data. The organizers of the task encouraged collaborations for researching and expanding the task for CLEF 2019.

INTERNATIONAL CONFERENCE ON INTELLIGENT SYSTEMS - PORTUGAL

I presented a paper titled "Voice Controlled Robotic Manipulator with Decision Tree and Contour Identification Techniques" at the 9th International Conference on Intelligent Systems held at Madeira, Portugal during 24-27 September 2018. I presented the paper on behalf of my teammates Arul Thileeban and Gajesh and my project guide Prof. Thenmozhi. The paper was published based on the work done in our internal funding project for 2016-17, which was to build a voice controlled robotic arm. The paper was accepted into the robotics session of the conference conducted on the last day.

Attending the conference was an intellectually satisfying experience as I got the opportunity to interact with PhD scholars, professors and researchers from various universities throughout Europe and the US. I arrived in Madeira on the 24th September to complete registrations and also be a part of a catamaran ride organized by the conference to enable the participants to break the ice and interact with each other. The opening address of the conference was given by the President of the Madeira Government who welcomed the participants.

There were several artificial intelligence related sessions during the first day including sessions on neural networks, machine learning, future cities and intelligent transport systems. The second day contained mostly workshops related to security, smart cities and soft computing. At the end of the second day, an official dinner was organized at the House of the President of Madeira. Several elements of the local culture were on display during the course of the evening. On the final day, my session was scheduled for the afternoon along with 4 other presenters. My presentation went smoothly. The work presented by other presenters was interesting and related to planning in robotics.

After my presentation, I had to return back on the same day due to time constraints and wasn't able to attend the final presentation ceremony and banquet. The experienced exposed me to the latest research taking place in artificial intelligence and robotics and was a fantastic one.

Daniel Jeswin Nallathambi
IV Yr CSE

INTERNATIONAL CONFERENCE ON IMAGE PROCESSING - GREECE

My research team was provided with the amazing opportunity to present our work in the 25th IEEE International Conference on Image Processing (ICIP). The conference was held from the 7th to 10th of October 2018, at Athens in Greece. It is a well renowned conference in the image processing and computer vision society.

The project that my team worked on involved using deep learning and image processing techniques to detect glaucoma from retinal images. The dataset comprised of retinal images whose ground truth were labels that indicated whether the eye was glaucomatous or not. Our process pipeline to address this problem statement utilized image processing and deep learning techniques to segment and extract the region of interest and train our classifier network – a convolutional autoencoding framework – using a weighted multitask learning procedure based on both image reconstruction and classification in a semi-supervised learning method. Our approach to this problem was novel and we were able to achieve better and more robust results compared to other state-of-the-art deep learning methods.

This opportunity was a result of our consistent efforts in research in the computer vision domain for two months. We initiated our work in the month of December and submitted our research paper two weeks into February. We eagerly waited for intimation from the conference regarding our proposal for two and a half months, and finally in May we were informed that our paper has been accepted for presentation.

We were a part of a small group of undergraduate students from around the globe that had the opportunity to present their work at a conference of such repute. Furthermore, we also enrolled in a student networking event that helped us connect with other professionals from across the globe who strive to achieve results in the same domain that we are interested to pursue research in. This trip provided us with tremendous exposure and it was an enthralling experience altogether – presenting our work, networking with scholars and professors from different countries, and travelling to Athens – a city filled with history and tradition and a great place to tour around!

Manav Rajiv Moorthy
IV Yr CSE
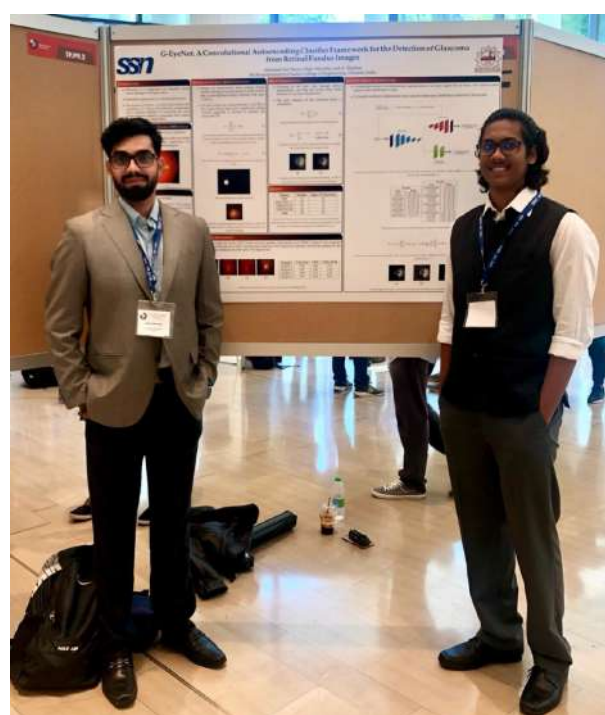
WORDS FROM AMISHI AN ALUMNA

I am **Amishi M. Kapadia** from the batch of **2012 of Master of Engineering in Computer Science and Engineering** at SSN College of Engineering. SSN is the place where my aspiration got wings and I could learn and enhance my skills and knowledge to further pursue my research.

I had completed my Bachelors from a normal college and my intake was almost a miracle when I had lost hope that I could pursue my masters in the year 2010. All the staffs of CSE department have been a great support throughout my master's program and even now.

Dr. Chitra Babu, Dr. R.S. Milton, Dr. D. Venkatavara Prasad, Dr. R. Kanchana, Dr. J. Suresh, Ms. M. Saritha, Dr. Kalyani Bhaskar to name a few to teach us from technical skills to programming language and industry based software management and a lot more in the area of current research. I would like to thank each one of them for supporting me and motivating me to strive for better each and every day. The technical seminars made us improve our presentation skills and which helped me to take guest lecture on the current trends at academic level. We were nurtured from a layman to an industry required software professional. I even got dual placement opportunity in Cognizant and Infosys where I chose to opt the former.

SSN has taught me to be more independent as we were given an option of residential course and I was never exposed to that earlier. After hours of college amidst the greenery, the library has been a great place for research as we had access to quality research papers like IEEE and Springer.

I would like to share my experience on my final year project with Dr. Latha Parthiban and Dr. T. T. Mirnaline where my topic was ' A Hybrid Approach for Diagnosis of Diseases'. I would take this opportunity to thank them to always guide me, help me be an independent researcher, improve my writing skills to a great extent. The discipline to do the work on time, with lot of effort and not giving up even if we do not find a solution has been a great learning for me which has made me a better and a stronger person to face real time challenges be it personal or professional.

I would take this opportunity to even thank Dr. P. Venugopal for enhancing my engineering mathematical skills and help me improve my research work which consists of mathematical analysis.

I would like to throw some insights on the current technologies in trend and they would go like Artificial Intelligence, Seamless voice communications, automation, UI, augmented reality, blockchain and cyber security to name a few with e-commerce giving a new platform in the field of business.

It has been 6 years and I am working as an IT professional, it just feels like yesterday when we had graduated. Currently I am pursuing my Ext. Part time PhD from VIT University Chennai. I am indebted to SSN for making me what I am today where I am able to manage my studies and job very successfully. Overall it has been a great learning experience and lifetime of friends is what I got at SSN and I would cherish it throughout my life.

You can further reach out to me at **amishimkapadia@gmail.com**

How do trees get on the Internet?
    They log in.

What do computers like to eat?
    Chips.

What is a computer's first sign of old age?
    Loss of memory.

What does a baby computer call his father?
    Instead of Da-da it says "Da-ta."

Why did the computer go to a doctor?
    It thought it had a terminal illness

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