Volume 3, Issue 2

CSE Newsletter

SMRITI

Memory Archives...

SNEAK PEEK

FROM THE HOD'S DESK

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VOICE OF ALUMNI

HOD'S DESK

I am extremely happy to bring out another issue of the newsletter filled with lots of activities and achievements of faculty members as well as students. My heartfelt congratulations to Bharathi and Suresh for successfully receiving their doctoral degree. It is very heart-warming to see that 8 student projects involving a total of 26 students and 9 faculty members have received internal funding from management. My appreciations to everyone who made this happen.

I am very glad to see that several students have pursued interesting internships during the winter vacation. My special appreciations to Satish who has developed software to detect emotions from text. It was a proud moment for the entire department that the drama directed by our students Srinath and Vaishnavi won first prize in the prestigious Saarang cultural festival hosted by IIT Madras.

Our alumnus Abhishek Khataria has shared his graduate school experiences at U.S. I would like other alumni also to share their academic or industrial experiences through this newsletter.

Dr.Chitra Babu

FACULTY DETAILS

Paper publications

1. Vallidevi K, "Versioning Based Dynamic Reconfiguration for SOA Applications", Research Journal of Applied Sciences Engineering and Technology, Maxwell Science Publication, ISSN, 2040-7459, October 12 2014. **Impact Factor: 0.16** (Accepted).
2. Suresh Jaganathan, Srinivasan A & Damodaram A, "Optimized Grid Based e-Learning Framework" Research Journal of Applied Sciences, Engineering and Technology, (IF 0.28, SJR 0.16, Annexure-II). (Accepted), September 2014.
3. Suresh Jaganathan, Dhivya Veerappan, "CIADS: A Framework for Secured Storage of Patients Medical Data in Cloud", International Journal of WSEAS Transactions on Information Science and Applications, **(IF 0.248, SJR 0.151, Annexure-II), January 2015, (Accepted).**
4. Bhuvana, J., "A Hybrid Evolutionary Algorithm for Discrete Optimization", Research Journal of Applied Sciences, Engineering and Technology, Maxwell Scientific Publications, November 2014. (Accepted)
5. M Vora, TT Mirnalinee, "Small-World Particle Swarm Optimizer for Real-World Optimization Problems", - Artificial Intelligence and Evolutionary Algorithms, Advances in Engineering system and computing, ***Springer, November 2014 (Accepted)***
6. P. Arjun, T.T.Mirnalinee, S.Sindhuja, G.Bharathi Raja "Affine Invariant Shape Descriptor using Object Area Normalization", Springer. Annexure II Sl No:12563, Lecture Notes in Electrical Engineering, November 2014, **Impact Factor 0.11 (Accepted**)
7. Bhuvana J. And Aravindan C., "Memetic Algorithm with preferential local search using adaptive weights for multi-objective optimization problems", Soft Computing, Springer, **Impact Factor: 1.304, DOI:10.1007/s00500-015-1593-9 (Accepted)**
8. C. V. Vishal Ramaswamy and Ms.S. Angel Deborah published a paper titled "A Survey of Robotic Hand- Arm Systems", in International Journal of Computer Applications, Vol. 109, Issue Number:8, pp: 26 – 31. ISSN: 0975 – 8887 (Online)**.(IF- 0.715)**
9. Sanjana Sahayaraj, Shomona Gracia Jacob. Data Mining to Help Aphasic Quadriplegic and Coma Patients, International Journal of Science and Research (IJSR), Vol.3 (9), pp. 121-125.
10. Sanjana Sahayaraj and S. G. Jacob, "Binary Categorization of Brain EEG Data : Case Study", *International Conference on Intelligent Information Technologies (ICIIT),* CEG, Anna University, Chennai, pp. 185-186 , December 11-13, 2014.
11. U. Lakshmipriya and S.G. Jacob, "Predicting Protein-Protein Interactions through Associative Rule Mining Techniques: A Comparative Study", *International Conference on Intelligent Information Technologies (ICIIT),* CEG, Anna University, Chennai, December 11-13, 2014, pp. 198-201.
12. Shahul Hamead and Vaishnavi.R, "Reinforcement Learning Based Service Provisioning for a Greener Cloud", 3rd International Conference on Eco-friendly Computing and Communication Systems (ICECCS 2014), December 18 - 21, 2014, NITK Surathkal, Mangalore, India. pp. 85-90.

Patents Filed

1. A Patent has been filed, application no: 0171/CHE/2015, filed date: 12/01/2015, patentee: Kanchana Rajaram, ChitraBabu, S.M.Sindhu, Titled: WS-SM: A system and method for Secured Messaging among Web Services with pluggable APIs

Guest Lectures Delivered

1. Mr. S. Senthil Velan gave a talk on "Graphical User Interface: Analysis and Design" in the Anna University Faculty Development Programme on Software Engineering at Jeppiaar Engineering College.
2. Dr. S. Sheerazuddin delivered a lecture on "TCS for Web Services" in International Conference on Theoretical Computer Science and Discrete Mathematics from December 8-10, organized by the Department of Maths, SSN College of Engineering.

Research

Dr. B. Bharathi, successfully defended her thesis entitled **"Speaker Recognition using speaker-specific-text"** on **03-11-2014(Monday)** under the supervision of Dr. T. Nagarajan, Professor & Head, Department of IT, SSN College of Engineering and was recommended for the award of the Ph.D Degree in the Faculty of Information and Communication Engineering. The Public Viva-Voce Examination was conducted at the Conference Hall, Department of Information Technology, SSN College of Engineering. Nearly 60 members comprising of Teaching Faculty, PG and Research Scholars witnessed the proceedings.

Dr.Suresh Jaganathan, successfully defended his thesis entitled **"Design of Protocol for Multimedia streaming and its services in Wireless Grid Networks"**, under the supervision(s) of Dr. A. Srinivasan, Professor, Department of Information Technology, MNM Jain Engineering College and Dr. A. Damodaram, Professor, Department of Computer Science and Engineering, Jawaharlal Nehru Technological University, Hyderabad. Thesis was recommended for the award of the Ph.D degree in the Faculty of Computer Science and Engineering. The public Ph.D Viva-Voce Examination was conducted on **22.01.2015 (Thursday)** in the Seminar Hall, Department of Computer Science and Engineering, JNTU, Hyderabad, with Dr. G. Sivakumar, Professor, Deparment of Computer Science and Engineering, IIT Mumbai as External Examiner. Nearly 30 members comprising of Teaching Faculty and Research Scholars witnessed the proceedings.

One day workshop on Research Methodology

On 10th December'2014

One day workshop on "Research Methodology" was organized by Centre for Faculty development, Anna University, Chennai for research scholars. The workshop gave an overview about research methodology and techniques of writing research articles for SCI Journals. The first session was handled by Dr.T.Thyagarajan, he spoke about steps involved in academic research. This session was very motivating and practical. Following it, the next session gave details related to technical writing. The session was handled by Dr.Usha Natesan, she encouraged scholars to publish papers in SCI journals. During the afternoon, Dr.Jayanth Jacob talked about theory building and introduction to statistics. Then the program ended with hands on session on latex by Ms.Ambika.

Attended By,

Ms.R.Priyadharshini

Ms.S.Angel Deborah

FDTP on Design and Analysis of Algorithms

December 11-18, 2014.

The Faculty Development Training Program on "Design and Analysis of Algorithms (CS6402)" was organized by Department of Computer Science and Engineering, SSN College of Engineering, Kalavakkam, Chennai during December 11-18, 2014. Dr.Chitra Babu, Professor and Head, Department of Computer Science and Engineering, Mr.V.Balasubramanian, Assistant Professor, Department of Computer Science and Engineering were coordinators for the program.

Brochures were prepared and sent to different colleges affiliated to Anna University, Chennai for wide publicity. The same brochure was also uploaded in the college website, www.ssn.edu.in. The program was well received among faculty both young as well as experienced. A total of 26 faculties from 17 different engineering colleges attended the training program. The seven days program was divided into 28 sessions, with two fore-noon and two after-noon sessions which included lecture hours and tutorial sessions. A total of twelve resource persons were engaged for course delivery out of which four were external.

After formal registration, first day, first two sessions were engaged by Dr. R.S. Milton, Professor, Department of Computer Science and Engineering, SSN College of Engineering, who gave introduction to algorithms and asymptotic notations. The third session was engaged by Dr.Sriram Rajamani, Assistant Managing Director, Microsoft Research India, Bangalore. He covered the importance of algorithms from an Industry perspective and touched upon their community initiative on Massively Empowered Classrooms. The last session was handled by Mr.V. Balasubramanian, Assistant Professor, Department of Computer Science and Engineering, SSNCE, covered Analysis for Non Recursive and Recursive Algorithms. On day two, the first two sessions were handled by Dr.Meghana Nasre, Assistant Professor, Dept. of CSE, IIT-Madras. She covered Maximum Matching in Bipartite Graphs and Stable marriage Problem. Next two sessions were handled by Ms. S.V. Jansi Rani, Assistant Professor, Department of Computer Science and Engineering, SSNCE, covered Divide and conquer: Merge Sort, Quick Sort and its behaviour, Binary Search. On day three the first two sessions were handled by Dr. Madhavan Mukund, Professor and Dean of Studies, Chennai Mathematical Institute, Dynamic Programming: Warshall's, Floyds and Optimal Binary search tree algorithms. The next two sessions were handled by Mr.V. Balasubramanian, Assistant Professor, Department of Computer Science and Engineering, SSNCE covered Strassen Multiplication, Closest-Pair and Convex-Hull Problems using Divide and Conquer technique, Computing a Binomial Coefficient using Dynamic Programming.On day four, Dr. R. Kanchana, Associate Professor, Department of Computer Science and Engineering, SSNCE covered Dynamic Programming: Knapsack, Prims and Kruskal's algorithm using Greedy. The next two sessions were handled by Dr. T.T. Mirnalinee, Professor, Department of Computer Science and Engineering, SSNCE, delivered lecture on Greedy Technique: Dijikstra's algorithms and she continued with Huffmann's Tree on day 5 first session. On day five, the second session and last session was handled by Dr. R.S. Milton, Professor, Department of Computer Science and Engineering, SSNCE covered Closest-Pair and Convex-Hull Problems-Exhaustive Search, TSP - Knapsack Problem - Assignment problem using Brute force technique and Travelling Salesman problem using Branch and Bound technique.The third session was handled by Mr. H. Shahul Hamead, Assistant Professor, Department of Computer Science and Engineering, SSNCE, covered Maximum-Flow Problem.

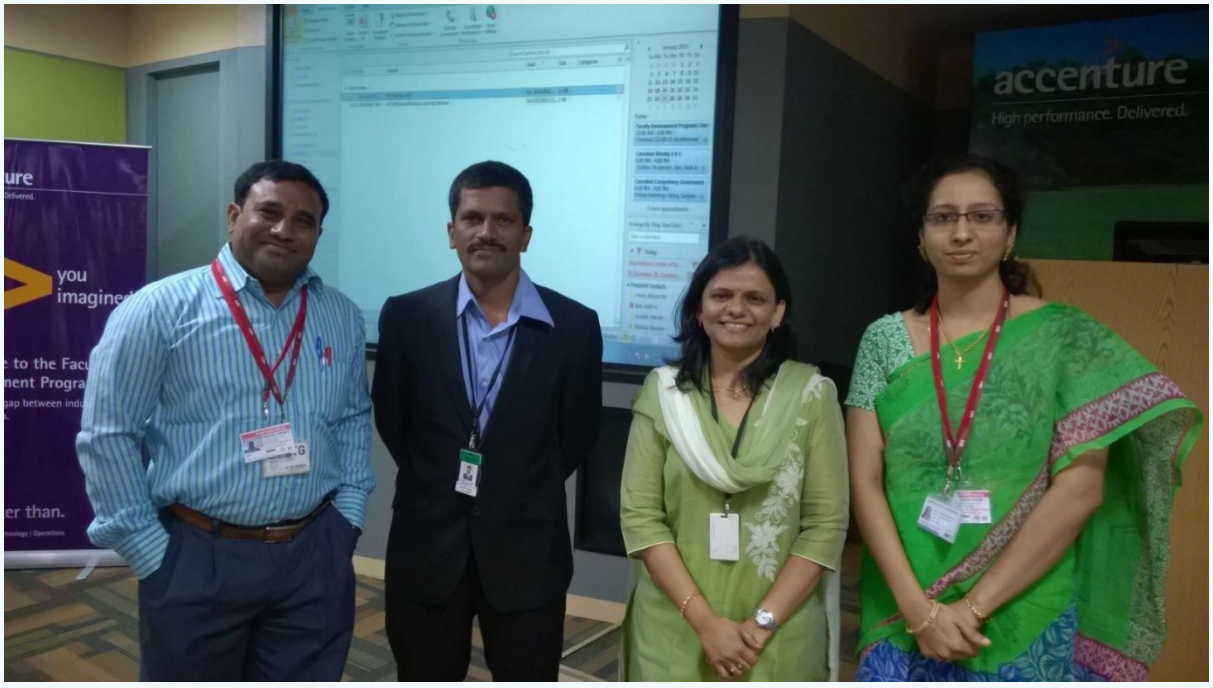
On day six, the first two sessions were handled by Dr. Rahul S Marathe, Associate Professor, IIT-M covered Simplex method. The next two sessions was handled by Ms. S. Kavitha, Assistant Professor, Department of Computer Science and Engineering, SSNCE covered Hamiltonian Circuit problem using backtracking technique and Assignment Problem, Knapsack using Branch and Bound technique. On day seven the first session was handled by Dr. R. Kanchana, Associate Professor, Department of Computer Science and Engineering, SSNCE covered 8-Queens & Sum of Subset problem using backtracking technique. The next three sessions was handled by Dr. S. Sheerazuddin, Associate Professor, Department of Computer Science and Engineering, SSNCE and covered Decision Trees-P, NP and NP-Completeness, Traveling Salesman problem, Knapsack problem and approximation algorithms, and concluded with feedback from participants.

Faculty Development Programme on

" Learning Trends and Futuristic Technology"

Accenture hosted a one – day Faculty Development Programme (FDP) on "Learning Trends and Futuristic Technology". Mr. S. SenthilVelan and Dr.Shomona Gracia Jacob, Associate Professors, Department of CSE, attended this FDP that mainly intended to let the faculty be informed on the current industrial trends and verticals at which Accenture was focussed and how students from renowned institutions as SSN who have been a great asset to them in the past could be further equipped to be a part of such organizations in future. The FDP comprised of fifteen faculty from prestigious institutes like SSN, Anna University, Bannari Amman Institute of Technology, Kumaraguru College of Technology, Sri Venketeswara College of Engineering, Meenakshi Sundararajan Engineering College and GCT Coimbatore.

The FDP was scheduled to be held in two sessions. The forenoon session commenced at 10:00 AM with a brief introductory talk by Ms.RadhikaSooraj, Senior Manager, Global Development, on Accenture and its services with respect to Technology, Operations and Service. This was followed by an introduction of all the faculty members who were also asked to describe the expectations of the current generation of students and how the same can be handled effectively. Ms.Radhika Sooraj began the descriptive session at 11:30 AM on Learning Characteristics and Styles of individuals and how they can be effectively taught. This was followed by a short video presentation on experiences of students across the globe on how they wish to learn and which aspect of teaching makes it most informative. A short overview of the changes in the attitude and expectations of students across generations was also discussed. It was a very interactive session as faculty were asked to express their views on each aspect of the topics discussed and it was a very fruitful session.



Following lunch, the faculty were taken on a visit to the Innovation Centre, Accenture where the applications and service areas of Accenture were presented. Most of their projects appeared to span the mobility, cloud and data analytics aspect of technology. Demo of their projects were also presented along with a description of the challenges they face in analyzing customer requirements and finally meeting those requirements – within deadlines.

The post-lunch session winded up after a real-time experience of ' Learning in a Connected Classroom' where the same FDP was being hosted concurrently by Accenture at Pune, Hyderabad and Bangalore locations with the faculty at all the centres participating in a common presentation and discussion on the evolving technology trends like SMAC, DIGITIZATION and SMART COMPUTING. This session was handled in Chennai by Mr. Srinivasan.

We were taken to the auditorium at 5:30 PM and the FDP concluded after the faculty gave their feedback on ways to improve the same. We thank the Management of SSN Institutions and The Head of the Department – CSE for having given us this splendid opportunity.

Mr. S Senthil Velan and Dr.Shomona Gracia Jacob

FDP on Industry Applications of Data Structures, Error Handling & OOPs at Cognizant Technology Solutions, Thoraippakkam, Chennai

On 17 Dec 2014

Around 76 faculty members from 8 different colleges participated in the FDP. Mr.Rengarajan Krishnan, Associate Director, CTS handled the sessions. He talked about the gap between assignments solved in practical courses of UG curriculum and the actual problems solved in an industry. He emphasized the importance of teaching the students how to apply the concepts of data structures and Object Oriented Programming in real time applications. A real time application Error logger which is used in all the in-house software of CTS, was discussed with code snippets to illustrate the usage of Queue data structure and OOP concepts like static members to implement a global object. Ms.Absala from HR team of CTS organized the programme.

Attended by,

Dr.R.Kanchana

Ms. B. Prabavathy

EIS Technova 2014

Dr.T.T. Mirnalinee, Dr.R.Kanchana and Dr.V.S.Felix Enigo attended the EIS Technova 2014 at TCS, Siruchery, Chennai.

There was an introduction and overview of EIS projects and then we were led to the stalls by the EIS HR Team. We could see the following projects and appreciate the interdisciplinary aspect of the projects apart from innovations.

1. DOW Solar energy usage – shingles for solar energy saving to be fixed on the roof of the house are designed by TCS automatically based on Google earth – shade analysis is performed to maximize energy saving

2. GE's solar power generation, mobile RO plant to provide pure water as input to the boiler, smart grid with smart meters of electricity usage that monitor, predict and analyse power usage and requirements and take corrective actions for minimal or no usage, Data analytics using cloud.

3. Retail Solution using Geo Map Analysis - Facility management - Product life cycle management – Drive time analysis – distance based analysis, competitor, trade area/ demography based analysis – asset management

4. Mitsubishi heavy industries Plant Automation System - Manufacturing Execution System (MES) - Automated shop floor operations - BOM processing - involves Data analysis and monitoring

5. IOT innovation lab: Industrial Internet involves installing sensors in industry (eg. wind mill) to gather data using Digital Product Memory (DPM), upload in cloud - Hadoop, analyse to get some knowledge and transfer intelligence to neighbours. It uses EPICS, a real time subscribe publish protocol,

6. S2S innovative Lab: Smart home – elevator monitoring – UPS efficiency analysis – using sensors

7. Boeing: MES – CAD/CAM, CAS – customization of flight building – 3D modeling

Post lunch session was FDP on “Re-imagine Engineering" - Digital forces shaping Industries future! - Sensors to Software. Mr.Anand Sampathraman, Head - Plant & Enterprise Sustainability Solutions Engineering & Industrial Services discussed the need of the hour – Connected World and industrial internet.

He brought out the challenges in digital engineering and the salient points from his talk are the following:

- IoT (Internet of Things) Town
- Facebook of machines
- Connecting agriculture farms, animals, healthcare units, nature, aircrafts, medicines, automobiles, etc
- Edge analytics
- Service centric management
- Visualization
- Surveilence

Mr.G.Jegannathan from HR team explained the different avenues for academic industry collaboration like Engineering Design contest EngiNx, Campus commune, Research Scholar program, courses from TCS, etc. They invited feedback ad suggestions from all the faculty members. Finally, they requested the faculty to identify the common interests and areas of collaboration to explore further through closed group discussions.

Grace Hopper Celebration

The Grace Hopper Celebration of Women in Computing is the annual conference held for women in prominent positions in the technology industry as well as computer science and IT academia. It is supported by the Anita Borg Institute as well as ACM-W, India. Sponsored by industry biggies like Google, Amazon, Intuit, Microsoft, NetApp, Goldman Sachs, Morgan Stanley, Cisco, etc. The event was conducted in a large scale at the Lalit Ashok Hotel in Bangalore on the days of November 19, 20 and 21. Vaishnavi. S, Sanjana. M, the HOD, Dr.Chitra Babu, and I represented SSN.

The day-long Boot Camp on Ruby-on-Rails held on the first day was a fruitful experience. We learnt some powerful yet just a few commands to execute a simple web service using ruby-on-rails. The day long boot camp was conducted by the employees at Intuit, and the event was powered by Morgan Stanley.

The second day started off with keynote speaker, Ms.JayshreeUllal, CEO of Arista Networks, and leading entrepreneur, giving an inspiring speech on how it's imperative for women to achieve greater heights in their career, even when it comes down to sacrificing a few things. The day's agenda was spilt up into different tracks like Tech Talks, workshops, Entrepreneurship and Innovation sessions, and Management sessions. We attended a variety of sessions like the Software- Defined Networking workshop where in a software called "Opendaylight" was introduced to the participants .Tech talks on analytic footprints getting bigger by the day, were informative and useful to the listeners. A well accomplished panel of speakers from various walks of technology discussed how to think different and make a difference in social entrepreneurship. The post lunch session involved another keynote by Ms. Jane Moran, the CIO of Unilever. She stressed the importance of women taking that extra effort to create a space for themselves in important meetings and in office. After the keynote many interesting sessions like the ones on security management in big firms, handling difficult conversations at work, recognizing entrepreneurial talent and many others happened through the evening. A social dinner was organized that night for the attendees and speakers to network and communicate informally.

The third day also proceeded in a similar way with talks happening in three different tracks. The talk on machines that learn was highly interactive and informative. Many panel discussions with eminent entrepreneurs as pane lists took place, where topics such as, how to materialize an idea and how to strengthen a business' customer base were discussed.

Two other attractions were, the career fair that happened alongside the conference, where a number of the sponsoring companies had put up stalls, and the poster display section, where a good deal of posters representing innovative ideas were put up. The career fair was an exciting experience for us as we got to connect with the HR and Tech heads of many dream companies like Google, Microsoft, Amazon, Morgan Stanley, Cisco, etc. As the cherry on top of the cake, we each got a big bag of goodies that we brought back home. Overall, the conference was an unforgettable experience, with enlightening speakers to listen to, informative workshops to attend, really good food, and wonderful ambience at the hotel we stayed in.

Women make it happen, Women inspire!

IMSc VISIT

On 07-11-2014 Friday, the Department of CSE had arranged an Industrial Visit to The Institute of Mathematical Sciences at Taramani, Chennai. DrD.Venkatavaraprasad and Mr. Shahul Hammead have accompanied M.E C.S.E and S.E students to IMSc.

At the institute, Prof. R. Ramanujam gave a lecture on what are the future scope of Computer Science fields and which one to choose as "Area of Interest". His speech was interesting and made students to realize the need to choose an appropriate field as area of interest.

After about 10 minutes tea break, Prof. C.R. Subramanian gave a brief lecture on what is cluster computing and the technical details involved in it. The overall lecture turned to system specific lecture with the speech from Project System Administrator Mangala Pandi. He explained the performance of the clusters Nandadevi, Annapurna, Satpura, Vindhya and Aravalli.

After the lectures got over, the students were allowed to see the clusters. To sum up, it was an interesting industrial visit to know the real world implementation of what is being studied in subjects.

SEMINAR ON LATEST **MOBILE APPLICATIONS** AND **VIDEO ON DEMAND**

21-01-2015

It was an hour-long session in which we were addressed by **Mr Sameer, CEO, QuickPlayMedia Ltd**. and Mr Vijay, the Head of the company's Delivery center.Quickplay Media is a managed service provider that delivers end-to-end solutions to multi-screen pay tv.Its customer base includes some of the world's leading communication companies like Bell, Verizon and Rogers.It is now working towards providing high quality video on demand to a wide range of platforms including smartphones,smart TVs, tablets and connected cars. We were briefed about the company's other current projects and the cutting-edge tecnologies involved in them.At the end, two of our alumni, who are now part of Quickplay Media gave us a quick demonstration of the latest applications developed by the company.

QuickPlay MEDIA

INTERNAL FUNDED PROJECTS

S. No.	Student (s) Name	Year	Project Guide	Project Title	Amount (in Rs.)
1.	S. Vidhyalakshmi Naren T Kesh Satish P Naveen H	III	Ms. S. Angel Deborah	Software Controlled Appliances for Energy Conservation and Differently Abled People	25000
2.	Priyanka Suresh Siddharth. G Srikumar Sridhar Srinivas Bharathwaj Sudarshan. R	III	Dr.Chitra Babu Mr. H. Shahul Hamead Mr. K.R. Sarath Chandran Ms. S. Angel Deborah	Performance Enhancement of CPU Intensive Applications Running on Raspberry Pi	15000
3.	Arvind M BezzamVarun Devesh Rastogi Gayaprashad S Mageshwaran V	III	Dr. T.T. Mirnalinee Ms. P. Mirunalini	Real Time Image Processing Applications on Low Cost Embedded System	10000
4.	B.S. Megavarnam R. Seshan P. Venkatesh	IV	Dr. D. VenkataVara Prasad	Automated Self Balancing Bicycle with Obstacle Avoidance	25000
5.	S. Pravish P. Vignesh S.S. Purushothaman	IV	Ms. S. Kavitha	Brain Visual State Classification System using fMRI data analysis	13000
6.	C. Srividhya Vedavi Balaji	III	Ms. B. Bharathi	Speech based Integrated Development Environment (IDE) for compiling C, C++ and Java Program.	10000
7.	C.V.Vishal Ramaswamy	III	Ms. S. Angel Deborah	An Intelligent Robotic Hand – Arm System	25000
8.	D. Thiageshwaran S. Vignesh Sakthivel Murugan	IV	Mr. K.R. Sarath Chandran	An Integrated Augmented Reality System with Human Motion Tracking and Analysis	25000

Robotics Workshop
December 2014

Robotics is one flamboyant word in the life of a computer science student. We just had to get to know what it was all about !So when the opportunity came up to explore it, we jumped at it! A day after our third semester exams, we were sitting in IIT madras Research park all set for a week long program on the basics of roboics. It was organised by Lema labs,a company under the IIT madras incubation cell. We participated in teams of three and got to share one kit with all the required tools.

On the first day we learnt the basics of sensors ,using the bread board efficiently and most importantly making perfect wire connections !(our wires were cut if they weren't straight). At the end of the first day,we had built a 'Line follower Robot '–an autonomous robot that went perfectly over the loops and bends of a black track.

On the second day, we used our microcontrollers to program our robots using embedded C .The third day onwards,things escalated as we had to programme an Obstacle Avoider robot. Ironically, the most interesting thing at the end of the day was the homework assigned to us! It involved tweaking the functioning of the robot to make it perform better.

Also,the program was so well structured that every time we learnt a concept, we implemented it. One such concept we used was Pulse Width Modulation (PWM) to control the speed of our robot, which we learnt on the fourth day. On the final day we built a table top robot. It was such a fulfilling experience to be able to build a robot that could move on a table and never fall off! After 5 days of training, it culminated in a competition,where all the teams had to modify their robot to suit new track specifications,avoid obstacles, detect-caves,beep at zones and successfully reach the finish line!

Android Workshop by CSI Student Chapter

Android & apps seem to be concomitant today, with majority of the app developers being from Asia. Among the Asians, we Indians seem to be one of the most active ones, having found our own regime on the play store. Given this scenario, we the students of SSN from various departments wanted to get our hands on android app development.

We still feel not able to thank the CSI student chapter enough, for organizing this workshop, which was very informative as well as fun filled. It should be really appreciated that the cost of conducting this workshop was entirely borne by the student chapter itself. The same lessons, if taken outside would have cost thousands of bucks. Now, to mention the instructors from Target Solutions, they were very friendly people. They understood the difficulties that students face during their first time with anything and paced their training session accordingly. As the saying goes, 'Patience is a virtue'.

We started off with normal GUI programs involving buttons and text areas and moved on to the deeper concepts of MVC architecture, invoking events and the like. We students were jubilant to find out that each one of our android apps was working. The guidance was definitely commendable. Even the SDK was circulated to us before starting.

As for the lectures, they were very interactive. Even those who might not necessarily be the 'wide awake' ones in the classroom stood up in the mini auditorium to share their opinions and ideas. Towards the end of this workshop, a small written test was conducted to assess the knowledge we gained with regard to android programming. We students who are usually allergic to tests, took up this test with more than just enthusiasm. As we walked to the buses, we had the satisfaction of having coded a few android apps and that was enough to make our day.

- S.Sanjana

3rd year

Minimalistic Object Oriented Linux

We all love Linux, because it's open source and even if security concerns arise, all we have to do is wait for the next patch to be released. But has anyone of us thought of the design of this operating system? Is it really good enough? Maybe not. Because the developers of any OS would give performance more priority than an effective design. This revelation was brought to us in the guest lecture by Dr.DharanipragadaJanakiRam, IITM on 27.01.15. As a project, they had developed BOSS MOOL. BOSS is an OS developed by CDAC. The MOOL expands into - Minimalistic Object Oriented Linux. Dr.Janaki Ram and his students wanted to academically analyze an OS. The reason for choosing Linux is because it's open source and they have tried to incorporate object oriented features in the Linux kernel.

During the course of the guest lecture, Dr.Janaki Ram explained to us the notion of the role coupling and cohesion can play in efficiency. We all know that reducing coupling can relieve the modules of depending on a common variable. We also have an idea that good cohesion is needed among modules to support good functionality. The same applies to the kernel. When it comes to files of Linux kernel, grouping has been done, by extrapolating facts regarding at which point each functionality will be needed. Still the dependency on global variables can cause problems.

It is known that C programs are not OO. Thus, Dr.Janaki Ram and his students tried to bring in a little bit of C++ into the kernel code. Even the kernel can be visualized as different areas corresponding to memory allocation, device drivers, etc. Among these, one problematic area called device drivers was chosen. Of the entire device driver code, 80% was made to be in C++. As a result, some of the bugs due to the poor design seems to be eliminated, like the OS crashing due to malfunctioning of the device drivers.

Dr.Janaki Ram, reflected this many times that the use of OO concepts not only makes the job easier during the initial maintenance, but seems to be an angel when further maintenance works are required. He further explained how OO concepts seem to be very efficient in today's tech world involving multi-core processors. The right message was delivered on this day, "It is not just performance that matters in an OS, but also a robust design."

- S.Sanjana, 3rd year

GRAPHICS PROCESSING UNIT (GPU)

– a silent storm in the making….

With the performance of CPU hitting a wall, there was a crushing need for computer scientists to develop hardware which was much higher in computation power than CPU. This led to the advent of GPU with multiple cores and multiple arithmetic and control units, thus increasing the compute capability exponentially. Although, GPU's were used primarily for Graphics related research in the beginning, their potential effect on many other applications in the field of Data Analytics,Weather Modelling, Fast Fourier Transforms, Physical Simulations etc remained elusive until recently. Current day research on improving the efficiency of many applications extending beyond the realm of Computer Graphics by parallelizing the existing algorithms and implementing them on GPU's has peaked. Multi-processor systems are also used to implement data and computation intensive processes in parallel. Of course, the potential power of hardware cannot be harnessed without parallel developments in software. This has led to the invention of languages like OpenMp,CUDA, OpenCLetc which are used to program Multi CPUS's and GPU's. A Dual CPU and a GPU working in unison with a CPU is the basic environment of our project.

- A GPU is tailored for highly parallel operation while a CPU executes programs serially.
- For this reason, GPU's have many parallel execution units and higher transistor counts, while CPUs have few execution units and higher clock speeds
- GPU's have much deeper pipelines (several thousand stages vs 10-20 for CPU's)
- GPU's have significantly faster and more advanced memory interfaces as they need to shift around a lot more data than CPU's

We are soon approaching a situation where all our PC's,Laptops and even mobile phones will have a GPU embedded in the circuitry enabling developers to develop massively parallel application which will run many times faster than the sequential counterparts. So if you are looking to do a cutting edge next generation project, you should probably look into this !

-Ramya Sriraman,4th year B.E CSE

FOSS - Experience Freedom

Everyone is familiar of the term “Open Source”. But only a handful of them really use it. Sure, students learn to code in linux environment in college, but little do they know how vast and diverse these can be. FOSS stands for Free and open-source software, and yes it is truly free and open to everyone. Open source society is huge and widespread. Developers from all over the globe, be it school students or post graduates, are a part of this community. The amazing part is, everyone including you can become a part of their community.

So, what does “Open” mean ? It means, that the code database of any open source software is available for everyone. You must have noticed that, you cannot view the source code anywhere for most applications that run in Windows. But here in case of FOSS, the organizations make their codebase public. You can download it, even modify and compile it ! There are hundreds of communities you get to choose from. Agreed, that it is troublesome to compile a code, install required libraries, debug the errors and then build the application. Who would want to do that when you get ready-to-use packages in Windows ? Answer is, developers would.

When one starts getting involved with a community, they would find that the software has ample work to be done. From fixing bugs, writing documentation to adding new features, there are a truck load of other things to try. This means, you get to work on an actual software used by millions of people ! You don't have to pass interviews and tests to experience this. Also, even if you are an absolute beginner who knows only to execute a program demonstrating linear search, there are humongous amount of resources available to get you started. IRCs, mailing lists, Wikis of each community can teach you things you can never find in textbooks. People in these communities are often very helpful and enthusiastic about what they do. They are even ready to guide newbies from the scratch. And it gets more interesting, since there are millions of such softwares, there is atleast one pertaining to every major field. Operating systems, AI, Gaming, Arduino, Machine learning, Graphics, Networking, the list goes on.

Well, starting to contribute to a Open Source software can be pretty overwhelming. Moreover, these are updated very frequently, so the help guides you are looking at might be outdated. But again, one can learn something from this too ! What do you get after you manage to build a software and maybe fix a few bugs ? You would have slowly learnt how professionals make software , what technology and models are used and basically everything that is under the shell of a simple, yet extremely functional software. Many organizations also conduct programs to encourage more people to contribute. In fact, some even give out stipends to students! So, why don't you go ahead and give it a try and experience freedom?

M.R.Sudha

CSE-B, II year.

CMU-NITK Winter School 2014
National Institute of Technology Karnataka, Surathkal, India
December 10-24, 2014

Internship Program in Technology Supported Education(IPTSE)

The CMU-NITK Winter School 2014, was held from 10th December to 24th December at NITK Surathkal by Carnegie Mellon University, USA. I would say this was the perfect place for beginning my journey towards my lifetime goal of developing an Artificially Intelligent Machine that is way more intelligent than the humans are. 44 students from 30 institutions belonging to all corners of the country were selected to participate in this program. All the 14 days that I spent there at the Winter School seemed to be magical and like a dream come true for me, we had a hectic schedule that included rigorous research, coding, jargon filled tech talks, interactions with some of the greatest minds from India and professors from CMU,UC Berkeley that extended up to 20hrs a day, of which I enjoyed nearly every second of it. We were guided by Prof.Bhiksha Raj (CMU), Prof. Rita Singh (CMU) and Mr.Pulkit Agrawal (UC Berkeley). After a lot of confusion regarding the team formations, the four of us(SatishPalaniappan (SSN), Skand Arora (Amity University), DhruvGoel (MIT Manipal), Jinank Jain (IITJ)) randomly got together, which later ended up to be one of the best teams around, at the winter school. Our research guides introduced us to a plethora of ideas ranging from developing a national voiceprint database to detecting crime patterns. Inspired by them, we decided to pitch in our ideas for the projects. However, coming up with ideas and supporting them with feasible solutions seemed a daunting task.

We finally decided on a research problem namely "Emotion Detection from Text" codenamed "TexEmo". The applications of such a system are plenty. Personalized information generation for every user like advertisements, search results, etc can transform the web world. Such a system will enable the development of powerful human-computer interaction machines and will also lead to the evolution of more intuitive and emotionally characterized text to speech systems. Or how about developing the perfect recipe to inspire millions of people through a speech? We could analyze speeches by the world's greatest personalities to find out how the flow of emotions from their words inspired

SatishPalaniappan

Use of Kevlar Promises Thinner, Safer Batteries

A new battery technology developed by researchers at the University of Michigan could prevent short-circuits and fires with the help of ultra-thin Kevlar fibers. The researchers who developed the new battery have created a company -- Elegus Technologies -- to help market their innovation.

For the next 2 weeks, we worked day and night to achieve our objectives. We made great progress under the guidance of Bhiksha, Rita and Pulkit. As in the field of research, we kept on experimenting with a number of different ways through which we could come up with a more improved system and got mixed results. The 14 days ended in a flash. However, we had already begun our journey to develop a system that could understand emotions through text. Our work was even recognized by the media and got noted in The Deccan Herald newspaper (http://www.deccanherald.com/content/449978/44-students-prepare-10-projects.html) Inspired by our research guides, our team continues to work on this project codenamed "TexEmo".

(For more details/suggestions on our project visit: http://projecttexemo.wordpress.com/)

So get ready to be emoted by us, TexEmo is coming soon...!

Satish Palaniappan, 3rd Year.

INTERNSHIP AT KAAR TECHNOLOGIES

I went for a two week long internship at KAAR Technologies. KAAR Technologies is a global consulting firm focused at designing, delivering and deploying the finest ideas and SAP expertise to empower companies in achieving new heights of excellence in today's challenging business landscape.

Their combined thrust drawn from the business vision of their leadership team and assimilated SAP capability propels them to partner with their clients in identifying and architecting their business agenda. As a CMMi level 3 company, KAAR believes in being a trusted advisor to clients and fosters long-term working relationships by exceeding customer expectations.

Driven by the steadfast pursuit of excellence, KAAR Technologies exudes professionalism and proficiency in all areas of function. Every day they are inspired to impact businesses with original and imaginative approaches and help cultivate tomorrow's breakthroughs.

On the starting few days as I was not aware of SAP they taught me a few major things. I learnt about the various trackers used for various clients of KAAR. Then I was made to perform a few easy work. Then I learnt well about the ASAP Methodology. ASAP, accelerated SAP implement, means to go through the SAP implementation process efficiently. Accelerated SAP Methodology is proven, repeatable and successful approach to implement SAP solutions across industries and customer environments. Accelerated SAP provides content, tools and expertise from thousands of successful implementations. In the end of my internship I had to give a presentation on ASAP Methodology for those who had to undergo training in that topic (they where employees who have had at least a year of work experience at KAAR Technologies).

It helped me to experience a work place atmosphere. Practical experience of working in an industry was obtained. This gave me a confidence to enter the job world after finishing my studies.

D.SUPRIYAA

2nd year CSE

As anticipated, Microsoft's Cortana digital assistant will make the jump from Windows Phone to Windows 10, assuming control of many of the operating system's search features. Cortana, which will get her own place next to the Start button in the desktop taskbar, can perform many of the same basic tricks she does in Windows Phone. Cortana can be interacted with via text or natural voice queries, just like on mobile devices.

Still based off Microsoft's cloud-based Bing brains, Cortana can answer basic queries like "Will I need a coat tomorrow?" or how much it costs to attend the University of Washington, as Belfiore showed in live demonstrations. But Cortana's also been tweaked for more useful PC-like interactions. She can scour your local machine, OneDrive account, and even your business network to find files based on natural language queries. Belfiore showed off the capabilities by asking Cortana to "Find PowerPoint slides about the charity auction" and "Show me photos from December." The digital assistant surfaced the desired information nearly instantly.

lights out please

SSN'S LIGHTS OUT PLEASE-1st Place at Saarang 2015(IIT-M)

As a part of IIT Madras's dramatics competition held as a part of their annual cultural fest SAARANG 2015 on 9th and 10th January,SSN'stheater club Lights Out Please took to the stage an original adaptation of 'The Competent Authority' by ShovonChowdhury.The script was written by Siddharth. S Nelayil and Sreenivas V Rao. 'The Competent Authority' is a rib tickling take on Indian bureaucracy. It hints at the fact that a fictional world is so much better than the real world. Riddled with humour and an important moral, SSN definitely delivered in the preliminary elimination with the audience appreciating the 7 minute performance with rousing applause. The complete play was staged on 10th January. Detailed feedback regarding each of the competing plays was given by the judges and finally SSN's play was awarded the first prize for the year 2015.An amount of Rs.30,000 was awarded. The same play finished first the next day at Dramalog, held annually at Goethe Institute. The play's directors S.Vaishnavi and Srinath Narayanan got an opportunity to attend a workshop with renowned theater artist and filmmaker Mahesh Dattani on the same day.

VOICE OF ALUMNI

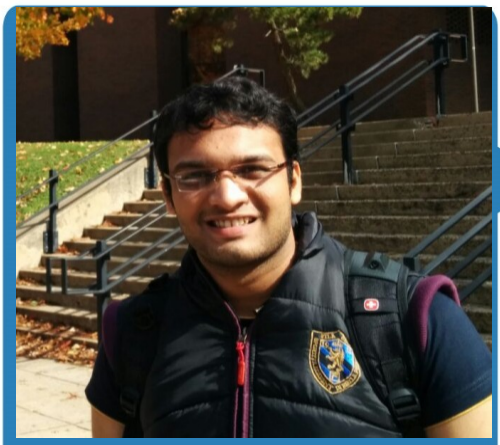
My love for computers and technology led me to pursue Computer Science for my under graduation. The passion only grew stronger during my tenure at SSN. In order to gain in-depth knowledge of various fields of Computer Science I decided to go abroad to do my Masters in Computer Science. Having considered all options available, I zeroed in on to Rutgers University, the State University of New Jersey. After doing my own bit of research I was convinced that the University would suit me and give me enough exposure. At the end of my first semester here, I can happily say, I am not proved wrong.

The first semester was three and a half months long. I had the liberty to choose my subjects and I chose 3 courses namely Algorithms, Operating Systems and Artificial Intelligence.

Algorithms course was entirely different from what I knew it to be. The classes taught me about sorting and selection, least common ancestors, range minimum query, level ancestors, van emdeboas tree, suffix trees, skip lists, universal hashing, external memory algorithms and NP Completeness. The class mainly focused on getting sub linear time algorithms for the above mentioned problems. The most interesting of all, was least common ancestor. It was achieved in constant time and linear time preprocessing. The course was designed with a midterm and a final exam. Assignments and deadlines every week streamlined the learning process.

Artificial Intelligence was in sync with what I learnt during under graduation. In addition, it covered aspects of Machine Learning. Implementing a maze game using A* algorithm, checking satisfiability of a Boolean formula using Genetic Algorithms, solving Sokoban challenge using planning domain definition language, Tom and Jerry problem using Markov decision process, enhanced my understanding of the subject. This course was also structured with a midterm and final exam. Preparing reports in latex gave me extra credits.

The most interesting and challenging course was Operating System. There was not much theory that we dealt with in class. The class was more like a workshop with only 14 students. We in groups of two had to add codes to this Operating System and build the kernel. The course had 5 projects which focused on implementing a rootkit attack on OS, adding signals like timer and segmentation fault handler to OS, thread library, memory protection, demand paging, copy-on-write and file mapping. I also got to read some famous systems papers throughout the course.



Abhishek Kataria
2010-2014

Samsung acquires printing solutions firm Simpress

The acquisition comes as Samsung searches for ways to stabilize earnings. The maker of Galaxy smartphones reported its first annual profit decline in three years as contributions from its erstwhile cashcow mobile division fell sharply.

One of the tech giant's responses to the uncertain smartphone outlook has been making acquisitions to strengthen its business offerings for corporate clients.

I had an opportunity to present a paper on Resource Protection during the semester. The highlight of the course was the exams. The midterm and final exams could be taken home. Ironically, that didn't make life easier. The exam lasted for 36 hours. The midterm was based on a paper where I had to read the paper and propose the design for it. For the finals, I got to implement a message passing mail system and shared memory with coherency protocol in xv6 OS. The course was altogether a unique experience.

Besides all the coursework, teaching gave me immense delight. I am a part-time lecturer in the department where I teach "Computers & Applications" to non CS students. I handled two sections this semester. Various concepts were discussed in class like scratch programming, databases, spreadsheets and other tools. It was a great experience handling recitation classes, lab sessions and office hours apart from grading the assignments and exams.

Though I missed study holidays to prepare for exams, things here move so quickly that there is hardly any time to ponder and lose momentum. Even results were out within a week. I am glad that I was able to do well.

The first 4 months in the US have been a complete life changing experience. I have learnt more things than just coursework, like staying away from home, cooking, managing time and meeting people from various cultural backgrounds. These few months have been a fulfilling experience, to say the least. I am eager to find out what is in store for me the coming year!

-Abhishek Kataria, 2010 – 2014, CSE.

SSN ACM STUDENT CHAPTER

Proposed events for this semester

1. Code County
2. Web App-athon
3. Algorithm Design Contest
4. Code the Bot
5. Mock Placement
6. Workshop on 'Blender'

MEET OUR TEAM

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