I am very happy to see another edition of Smriti being published with the combined efforts of our department faculty members as well as students. Let us set ourselves goals to reach new heights in this academic year.

I am extremely delighted to see that our students Vishwanath and Mukundan along with two IT department students have won the Cognizant CIO Challenge for the second consecutive year. I congratulate them for this significant achievement. I also appreciate Ms. S. Rajalakshmi for mentoring them with commitment and enthusiasm.

In this edition, couple of alumni who are currently pursuing Ph.D at IIT Madras and M.S. at an abroad university have shared their thoughts with us. I sincerely hope that the magazine will serve as a bridge between the faculty, current students and the alumni.
Workshops

**FDP – Big Data Analytics**

A two day faculty development program on big-data analytics was conducted by our department on the 19th & 20th of July in the PG lab. The event was attended by 35 faculties from various institutions across the country and 9 students from various engineering colleges; out of which 13 were from SSN.

The workshop was conducted in 4 sessions. The first session started with Mr. P. Narayanan from Tata Consultancy Services. He explained about the industrial growth in the field of big data. Following him was his company mate Mr. S. Sankar who spoke about NoSQL databases. He also gave an overview on hadoop and hive which made the session interesting. To top it, he gave an hands-on on hadoop.

The second day of workshop proved to be more interesting than the previous day. Mr. Senthil Kumar, from Cognizant Technology Solutions helped in setting up single node clusters in 30 machines in our lab. He explained configuration files and how they work. His session on map reduce framework took the workshop to another level. Also he showed how to run a java based map-reduce program in hadoop.

Post lunch session was given by Mr. S. Sanjay from Infosys. He spoke about the need of hadoop by giving real time examples. Also he explained about the CAP theorem. He then went on to show a python based map reduce program and he explained his work in the field of bigdata. The session was informative and interactive.
Ms. S. Radha Meena attended Faculty Development Training Programme on “Applied Soft Computing/Intelligent Control” held at Seminar Hall, EEE Department, SSNCE, Chennai from 11th June to 18th June, 2013.

The FDTP provides comprehensive introduction to the technologies underlying soft computing, an evolving branch of computational intelligence. The constituent technologies discussed in the FDTP comprise neural networks, fuzzy logic, genetic algorithms, and a number of hybrid systems which include classes such as neuro-fuzzy, fuzzy-genetic, and neuro-genetic systems. The hybridization of the technologies is demonstrated on architectures such as Fuzzy-Back-propagation Networks (NN-FL), Simplified Fuzzy ARTMAP (NN-FL), and Fuzzy Associative Memories. Tutorials and exercises on Neural Networks, Fuzzy Logic & GA was very useful.

FDP on Data Warehousing and Data Mining (DW&DM)

Ms. S. Kavitha, attended a Faculty Development Programme on “Data Warehousing and Data Mining (DW&DM)” at CTS on 26/7/2013. The FDP was focused on the projects and tool on ETL of CTS related to DW & DM.

During the first session Mr. Vasanth gave a gist on “The need of DW & DM in Real Scenario”. It was followed by a session from Mr. Sampath who elaborated on the importance of Data Quality and Test Data Management (TDM) with two applications namely Telecom Company and Credit Card Company. In the next session Mr. Sivakumar introduced the Enterprise Information Management (EIM) Trends 2013 with EDW architecture and different applications. He concluded the session with a insight on “What can be done with the Data?” for Business Intelligence outcomes. The last session was handled by Mr. Sriram, with a presentation on the ETL tool of CTS Informatica-Power Center with an application.
Transforms on Signal and Image Processing

K. R. Sarath Chandran has attended an AICTE-Sponsored Two Days National Level Seminar on Transforms on Signal and Image Processing on the 25th and 26th July 2013 at SSN College of Engineering which was conducted by the Department of Biomedical Engineering. The seminar was very helpful in making the basic concepts of different transforms stronger as well as to get some insights into the different types of applications where each type of transforms can be applied. The sessions were handled by professors from VIT Vellore, Kongu Engineering College and SSN College of Engineering. The programme was useful in exploring the new areas of research in this field. The real time demos in MATLAB also were given along with sessions which help to understand the effects of various transforms in different practical situations. In short, this programme brought on more knowledge about the transforms and its applications.

Gadgets

Motorola back in business

It’s not just Samsung vs Apple anymore. A new player has set foot into this ever-competitive smartphone market. Google Inc’s Motorola division appears set to unveil its much anticipated Moto X phone on August 1 at an event in New York City.

This is special not just because it’s Motorola’s first phone after Google took over the company $12.5bn last year, but because this phone is entirely customizable! Yes, you get to choose the processor, the RAM, the graphics processor and other specifications yourself when you buy the phone and it will be custom-built for you.
Dr. T. T. Mirnalinee presented a talk on "Introduction to security issues in wireless communication" at Prathyusha Institute of Technology and Management, Department of CSE for the AICTE sponsored National Level FDP.

Hariharan, a 3rd semester M.E.(SE) student of our college delivered a guest lecture on “Software Testing & Tools available in the market” on July 9, 2013 at Sri Muthukumaran Institute of Technology.

The lecture began with a generic introduction about the software development in the industry and how significant the testing is. He then spoke about the various approaches involved in the black box and white box testing. Also a hands-on training for the variety of open source testing tools was given by him. He found the students to be interested in the field of testing by the constant interactions that took place. The feedback that was received was much appreciated.
The Business Process Management Notation (BPMN) is a standard for business process modeling which provides notation for expressing complex business process semantics in the form of a workflow. The workflow represents an abstraction of real work as a sequence of connected steps. When multiple organizations are involved in offering a service to the consumers, workflow can be used to define the execution order of the processes. Whenever a workflow involves a composition of multiple services offered by different organizations, the behaviour of any given service may affect other services and the overall reliability of the workflow. A transactional workflow is considered reliable, if its execution satisfies the Failure Atomicity Requirements (FAR). For example, failure of a payment service requires undoing the order processing service that has been completed already. Thus, it is necessary to represent behavioural dependencies among the constituent services of the workflow and generate its FAR which is useful for checking the reliability of the workflow. However, existing workflow generation tools and methodologies do not model the transactional workflows which depict the transactional dependencies among the services involved in the workflows. Towards fulfilling this need, the present work proposes a pattern based modeling approach to construct transactional workflows. This approach involves the identification of FAR of each service in the workflow.
The doors to the challenge opened through the Cognizant Certified Student (CCS) Examination. People with the top five scores were invited for an interview from which a team of four was formed. The team was named “Sagacious SSN” with Viswanath M S and Mukundan S from Computer Science and Engineering department, Devarajan N and Vignesh V R from Information Technology Department as its members.

As a warm up of this we attended a Boot Camp in December 2012. In that we were given an insight to “One Cognizant” platform in which our apps are getting deployed. We were given a project titled “State Refresh Application” which required us to represent the state changes of the database by means of a colour code. The project took 3 months for its completion. We would like to thank the management for providing us such an opportunity. We would like to express our sincere thanks to our department Head Dr. Chitra Babu for motivating us to reach this goal. We would like to thank Ms. S. Rajalakshmi, (our mentor in college) who helped us through the project starting from the Boot Camp, through the various stages of this project and till the Grand finale. Her constant encouragement and thoughts gave us the confidence to secure the title for the consecutive second year. Mr. B. Senthil Kumar and Ms. R. Kanchana gave us an insight into the possible improvements in database level. Mr. K.R Sarath Chandran helped us to incorporate gamification concept in our app. Our Mentor Manager in Cognizant Mr. Ahad Ahmad Khan and Tech Mentors from Cognizant Mr. Davakumar and Ms. Bhargavi (alumini CSE dept who won CTS CIO’s Challenge 2011) helped us a lot to overcome the difficulties in our project. Our friends also gave suggestions in the wire frame of the project. The effort of this team got us a position in top 8 among the 27 teams from all over India.

The Grand Finale of this CTS CIO’s Challenge 2012 - season 2 was organized on 25th June 2013. 8 teams participated in it. Each team was asked to present their application in front of the judges. The panel includes Senior Managers of Cognizant and the Chief Information Officer of Cognizant Mr. Sukumar Rajagopal. Those moments are of immense stress. That too, being from a college who are the defending champs of the title and we also defended it successfully. Team Sagacious SSN were adjudged the winners and VIT Pune were the runners up. A person walked up to us and said “The theme of this competition is IPL and you represent CSK “.
Internships

Summer Research Internship at IIIT D&M

Adithya Seshadri, Mahati Kumar and Manasvini S of 4th year CSE A attended an internship at IIIT D&M from 3rd to 28th June 2013 in the field of theoretical computer science.

The internship was organized by Dr. N. Sadagopan, assistant professor at IIT D&M.

The purpose of the internship was to introduce students to research.

The internship began with lectures on graph theory by Dr. Sadagopan, starting with the basics about solvable and unsolvable problems, followed by in depth descriptions and analysis of graph theoretic problems. Thus, the first week concluded with strong foundations in graph theory. Algorithmic puzzles were posed on a few occasions, which drew lots of participation from the students. Teams consisting of 3-4 members were formed and a graph theoretic problem was posed to each group.

The remaining three weeks were spent in discussing the problems and possible solutions to these problems, which would eventually be published in a journal.

The problem posed was related to colourability of unichord free graphs and separators in planar graphs. An algorithm to determine if a graph is unichord free was also designed.

The internship was very illuminating for everyone. Coding would look rather simple, compared to the amount of analysis and thinking required for research! The depth of theoretical computer science is truly amazing, and the most important lesson learnt was: finding solutions is a lot easier than asking the right questions.

The following is the number of students who attended internships at various places.

- Tata Elxsi 4
- IIITDM 8
- IMSC 2
- Thoughtworks 2
- ONGC 6
- POLARIS 2
- Cognizant 8
- DRDO 3
- IISc 2
- East Tennessee State University, Tennessee 1
- London School of Business 1
**Internship at Ramco Systems Limited**

Venkatraghavan S of 3rd year CSE B attended an internship at Ramco from 19th to 28th June 2013 regarding basic project training.

The internship covered the steps involved in approaching a project. It covered aspects of requirement gathering, setting the work and development environment, design, coding, testing and deployment.

At the end of the internship, ‘Library Book Maintenance’ was given as a task to be implemented using Excel-VBA environment, with Embedded VBA for front end and Excel for back end.

Hands on training in an IT environment was gained at the end of the internship.

**In-plant training at Doyensys**

The team of R. Sanjay, C.G. Venugopal, D.Thiagesh and P.Vignesh of 3rd year CSE –B attended an in-plant training at Doyensys from 13th to 28th June 2013.

The objective was to develop an asset management database application using Oracle Apex for internal asset management of Doyensys. The training proceeded in phases.

The first phase involved testing of their SQL and PL/SQL skills and training in Oracle Apex, followed by a mini assignment. The ER diagram for the application was designed during the second phase.

Design of tables and triggers for the application was done in the third phase, which also included the submission of a report on the same. The final phase consisted of creation of forms and reports for the application, along with validation and demonstration of the application.

The training ended with a review during which useful tips were given regarding the improvement of the application to make it more user friendly.

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It used to be, “An apple a day keeps the doctor away!” Now, Samsung has made it, “A tablet a day keeps the Apple away.” In their ever-enduring need to outsmart the techs at Apple Inc., Samsung seem to have this inexorable range of smartphones and tablets coming out all the time. The Samsung Galaxy Tab 3 311 comes equipped with a 1.5GHz dual core processor with 1.5GB of RAM. It runs the Android 4.2 Jelly Bean. The device features an 8.0-inch WXGA display with a pixel density of 189 PPI and boasts a screen resolution of 1280x800. The Galaxy Tab 3 311 sports a 5.0-megapixel rear camera and a 1.9-megapixel front camera. It comes with 15GB internal storage which can be expanded up to 64GB with microSD card. It also packs a 4,450mAh battery. It’s typical Samsung philosophy. Pack in state-of-the-art hardware so that it sells big time!
Towards the Pursuit of Happiness

Arvind Krishnaa J
CSE Batch 2008-2012

Starting out as a naïve undergraduate student in Chennai, coming from a relatively decent high school, I like most of my peers had high hopes. One day, I would start a company rivalling the likes of Google, Microsoft etc., become rich and have a successful career. I am pretty sure everyone on their first day of college has such ambitions. No, this is not an essay on how to reach those goals – I am too young for giving such advice; I merely want to point out some of my observations after one year at Georgia Tech, highlight some of the dreams and ambitions of the students (undergrads, grads as well as PhDs and the professors), steps they have taken in that direction especially in the research community.

After having spent four years in the beautiful SSN campus, three of those years in the CSE department, I can proudly say that SSN is definitely a premier research institution. This is reflected in the quality of the final year projects, the amazing students which our department, in particular, seem to produce and the vast number of undergraduate students who are into active research. However, one significant difference I have noticed here is that research is mandatory here, even for undergraduates. While I was doing my undergrad, several of my peers were very keen on doing cool things – some of their efforts are very visible even now. But I have also seen several of them being more focused towards the end product and not really leveraging their efforts to create that product into a publication. I have been guilty of it myself. This is probably because we are not really exposed to the art of writing papers for the general good of the research community. While I was in my second year, I had this false notion that publishing papers is simply a process of padding up your resume. I have realized now that it is not the case – publishing papers is as much a public contribution as putting up code for software you have written on the web. My suspicion is that since our curriculum is based around text books prescribed years in advance, we are unable to be in touch with the research community. Here the undergrad exams are based on a mix of textbook chapters, journal articles and conference papers, which I believe is a more holistic approach towards academia than just textbooks. In that respect, our professors usually have a wealth of knowledge about good papers and conferences; I remember asking doubts in the AI and Computer Architecture classes, and the professors usually clarify them instantly and have referred me to interesting papers.

Contd.
This brings me to another interesting observation – somehow our curiosity in the subjects we learn over the four years seem to wane as time goes on. I can clearly remember how the absolute number of questions asked by students in class went down exponentially year after year. Also from personal experience, I have noticed that once I get my doubt clarified in class, I hardly ever go back home and further my understanding of the topic. I am usually satisfied with the professor’s explanation. On the other hand, I have been part of a few classes, where there were some highly intellectual, sometime very interesting discussions between the students and the professors, which in turn made the entire class understand that topic better. I am not saying go fight your professor – I am just saying don’t accept everything you learn blindly, after all that’s the scientific method.

I am almost envious of the way all the students here manage their time. I know PhD students who are avid bicyclists, graduate students who are trained in western classical music, professors who join students during spring break for a hiking trip! Just because they are buried in intense research and course work, they do not lose sight of their interests and hobbies. I look back a couple of years, and I dread all the time I could have used to learn the guitar or be fluent in German. However, I am pretty sure that most of the students at SSN are highly multifaceted and excellent managers of time.

It would be unfair to compare our very young department with really old and esteemed universities like Stanford, MIT or even Georgia Tech. But in my opinion, we have made giant strides in the right direction. Our college has a great sports program, excellent co-curricular activities (Instincts and Paradigm are among the best in the city). We have a large number of students who are actively looking to start their own company – the entrepreneurship cell of our college is the best in the country! I strongly believe SSN students are mostly on the right track, having no fear to following their passion. I just feel that those of us who are interested in research just need to endure a little more than others for success; a cricketer will be happy after a century, a track athlete after running the 100m in 10 seconds, but a researcher may have to slog years to achieve the results he/she wants!

So to sum up a rather long bunch of words put together, there are three main takeaways, laid down here for those who like to skip the explanations to long 16-mark questions (I plead guilty!)

1. Follow your passion and never give it up for anything
2. Question your knowledge constantly
3. Go into research if you are really interested – contribute as much as you can to the public!

In the days of Android and iOS domination, a firm named Canonical looks all set to start production of their Ubuntu-powered smartphones. In fact, one has to wonder if it’s a phone and not a mini-computer, although smartphones in recent days have entirely blurred this distinction. The phone will be powered by a ‘multi-core’ processor coupled with 4GB of RAM and would include 128GB of storage. It will feature a 4.5-inch HD display with a resolution of 720x1280 pixels and would sport a sapphire crystal display. There will be an 8-megapixel rear camera with low-light feature and a 2-megapixel front camera. Other features would include GPS, accelerometer, gyro, proximity sensor, compass, barometer and active noise cancellation. The Ubuntu Edge phone is said to feature stereo speakers with HD audio and dual-mic recording. Connectivity options include LTE, Wi-Fi, Bluetooth. If that still hasn’t blown your mind, this certainly will - the phone has a dual boot option between Android and Ubuntu.

Come Join The Dark Side........ Soon!
Student Updates

Sports

- S. Nitin from Final Year CSE triumphed in the St. Joseph’s FIDE-rating chess tournament which concluded on Wednesday at the St. Joseph’s College of Engineering campus.

Recent alumni pursuing their higher studies:

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<th>Name</th>
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<td>Mukundan</td>
<td>Ohio State University</td>
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<td>Niyathi Bhat</td>
<td>Bhima Institute of Management</td>
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<td>Sanjana Sridhar</td>
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<td>Sarulakshmi C S</td>
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Placement Information

The following companies have agreed to visit our college for campus recruitment.

- M/s Amazon.com on 31st July and 1st August 2013.
- The Elistists on 3rd August 2013.
- Thoughtworks Technologies Ltd. on 5th and 6th of August.
- Mu Sigma on 8th and 10th August 2013.
- Zoho dates to be announced.
The Three Letters

- Sowmya 2009-2013

Almost exactly four years ago, I proudly stepped across the threshold of one of the most sought after colleges in Tamil Nadu, SSN. As a person crazy about computers, it was with great excitement and hope that I took up the course of my choice and was curious to learn about the ways computers work.

After the first introductory year with some exposure to basic programming, I entered the CSE department. The experience was a complete contrast to the carefree days I spent at the Humanities Block. The onus of learning fell largely on individual students and I tasted, for the first time, the 'paradigm' shift between school and college education. With admirable faculty, facilities, challenging lab-work and a never-ending thirst to learn and understand, I was fortunate to have a great grip over the basics.

Academically, I also took time to attend many guest lectures, workshops and symposia possible ranging from something as completely unrelated as an astronomy lecture on black holes to an intensive workshop on supercomputing and brain modelling. The latter, no doubt, ignited the first sparks of interest in my area of interest, Artificial Intelligence. And yes, even though some guest lectures I attended for the sake of attendance, that iota of information I got was worth it. Also, I had an exciting opportunity to do an internship at IISc, Bangalore on language translation. That one month spent there definitely gave me a flavour of what research is. Finally, I have been chosen to do a direct PhD at IIT-Madras.

The process of admission to the course was a bit ambiguous to me, as this is the first time IIT Madras is offering direct PhD. I had been preparing for CAT all third year and to my utter dismay, I did not clear it. At a time when I had no confidence in myself, my parents pushed me to write GATE and give it a try. I am really grateful to them for that confidence they always had in me and my strengths and for being there with me through all my ups and downs in life. I did not prepare for GATE much but my consistent academic effort helped me clear the exam and boost my self-belief. Then, Bala Sir informed us final years about this opportunity through department mail. At this juncture, I thank Bala Sir for helping me through the process. I applied online and was selected for a written examination and interview. The criteria has been explicitly explained in the official website of the CS department at IIT-M. Overall, it took CGPA and GATE score into account. The written exam was divided into two sections – objective and subjective. The questions tested basics in Algorithms, TOC, Computer Architecture, Operating Systems and concepts of programming. After clearing it that day, there was an interview. The interview was a daunting aspect of admission, with fifteen members on the panel and questions that tested the strength in two chosen fundamental topics. My choices were Data Structures and TOC. The interview tested both knowledge of basic concepts and the ability to think, reason and draw inferences. Apart from that, they tested if the candidate is willing to work for four years as that is the minimum duration for a PhD. Later, I got a letter of acceptance by speed post.
Life at SSN was a roller coaster ride and one of the most fulfilling journeys I have ever undertaken. I have savoured the giddy delights of firm friendships, unbridled fun at Instincts, running the show at Paradigm, playing with words as the head of content development, compering, learning to organise events at ACM, winning scholarships, enjoying the scenic beauty of the campus and last but not the least, hunger-satisfying walks to the 'stores'. I have also felt the pressure of deadlines, programs that will work or not work according their own whim and fancy, some moments when I made a complete fool of myself and some blows that were hard to accept. Looking back, these myriad experiences made me who I am today, strong enough to handle situations and confident to participate in a tough and fulfilling course that I feel blessed to have been chosen.

To sum up, I'd like to thank all the faculty who put their best foot forward to provide a clear understanding of the subject and our HOD for providing many opportunities. As I wrote GATE, the written exam and answered interview questions, I felt at remarkable ease as I recollected some class or the other where I had learnt that particular concept. I thank SSN for the wonderful vistas that groom one's personality. From my journey what I'd like to tell juniors is to grab everything that you can, work hard and play hard. Do not let failures weigh you down and push forward. Maybe you will realise you were meant for something different. All the best for your placements and keep smiling, you can take a lot from SSN, be sure to give a lot back in your own way. On this note, I register my happiness as I move from one three-lettered dream institution SSN, to another – IIT.
The Great Mind Challenge

Online book store with mobile sms

Another team comprising of Srinivasan C, Srinath G, Shivkanth B, Sriram N under the guidance of Ms. S.Radha Meena have qualified for the finals.

Online Book Store is a system to implement an Online Book Sales System with SMS. It replaces the traditional book store by allowing you to view and order books directly from your home. The books ordered will be shipped to your doorstep. Unlike in a traditional bookstore, where you have to search for books moving from section to section, here the books are listed categorically in several ways which allows for easy access.

The system will also keep track of all the user's purchases and notify him whenever a book of his interest arrives in the market. The user can also pre-order books so that he can beat the crowd when they arrive in the market.

The fastest way to broadcast information today is by means of mobile communication. This system utilizes this technology to the fullest by notifying the user via SMS whenever a book of his interest arrives. Thus this system strives to make the book buying process pleasant and painless for the user.

What is this??

The Great Mind Challenge (TGMC) is a pan-India competition conducted by IBM every year. This competition tests your software engineering skills – you are expected to provide a full-fledged project in 2-3 months. At least one IBM software should be used. There are only two rounds in this contest.

The process:

IBM provides many project scenarios. You can choose any one and start with the Requirements document (SRS). There is a deadline for submitting the SRS. A detailed SRS with all necessary UML diagrams and corresponding description is expected. Then comes the project deadline. You have to put your project and necessary documentation in a DVD and courier it to IBM Bangalore.

The Finals:

The teams selected for the finals have to report at a TGMC Nodal Center in the respective city and do a live demo of their projects. This will be a face-to-face evaluation and you have to ‘sell’ your project to the judges. After about a month, IBM announces the winning team and the runners-up team. The top 15 teams in the country are felicitated at IBM Bangalore. There is also a prize for the best all-girls team in the top 50.

My Experience:

I participated in TGMC 2012 along with Aruna S, Anjana S, Nirmika L under the guidance of Ms. S.Angel Deborah and we have been selected for the finals. We did a project on “Attendance Marking using RFID”. We also added other features like Internals Calculation, Report Generation, Automatic e-mail and SMS module. I should say that it was a mind-blowing learning experience. In previous years, we were only exposed to mini-projects and small lab exercises. Only in TGMC, I experienced the workload of a full project. The sheer size of the project was dumbfounding at first. Then, as we completed it part by part, I began to gain confidence that we could finish the project. The numerous difficulties we faced with the new technologies, the race against time to meet the deadline, the wave of relief when the deadline was extended, well, you'll have to experience all that to understand it. I assure you that it'll give you the confidence to take on any challenging project later in your career.
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