SCIT

Web & Media Web and Media Committee Presents

ATHARVA

22nd Edition

September 2018

EDITOR'S CORNER

Haritha N

The month of September was quite happening at SCIT. With many events and festivals being celebrated on campus, the students showed tremendous support and actively participated in all the activities. Sprout IT, the annual entrepreneurship event of SCIT was a grand success and attracted participants from many colleges. The college was privileged to have dignitaries from the industry to preside over the 19th National Seminar on 'Amalgamating Big Data and IoT: A Leverage or an Adversary?'.

Ganesh Chatruthi and Navratri were celebrated in the campus by the students with enthusiasm and joy. A perfect combination of Academics and Celebrations, September was a package of responsibilities and enjoyment for the students of SCIT. Web and Media Committee proudly presents the 22nd Edition of Atharva to all its readers. Happy Reading!

What's Inside..

SPROUT' IT 2018

Divya Pichumani

The first and the most awaited event of the year 2018 – Sprout'IT was hosted at SCIT on September 8th, 2018. The IT Entrepreneurship and Leadership Forum (iTELF) committee came up with the theme "Vista – Vision of an Entrepreneur" for this year's event. The hardships and effort put into making this event successful was resonating in the campus. Every wall and pathway in the campus was beautifully decorated in accordance with the theme. A separate wall was dedicated to show the life and calendar of an entrepreneur.

Students from various other colleges gathered in huge numbers to participate in this event. The Inauguration ceremony took place in the SCIT Assembly Hall and was attended by both students and faculty members. The Chief Guest Mr. Vignesh Santhanam; CMO of Quidich Innovation Labs, Guest of Honour Mr. Parag Mutha; owner of Infosoft Technologies along with the Director Dr. Dhanya Pramod and Professor Apoorva Kulkarni lit the traditional lamp and inaugurated the event.

Dr. Dhanya Pramod addressed the gathering and pointed out that every individual is an entrepreneur. Following this, the motivational address by Mr. Vignesh Santhanam set the tone for the day. The audience then witnessed a visual treat by the theatre club of SCIT – "Eklavya". The competitions arranged for the day started right after the inaugural ceremony.

A total of twelve events were conducted as a part of Sprout'IT 2018. The various events held ranged from Case Study presentation, Corporate Interview to Treasure Hunt and Film making. The events were designed in a way to capture the true essence of an entrepreneur and also to highlight the various struggles that one has to go through to become successful. The enthusiasm and interest displayed by various participants motivated the organisers to conduct the events in the best possible way. The campus also witnessed a number of stalls which sold food, books, sports equipment and garments.

The event turned out to be a huge success and acted as a platform for students to display their skills. The spirit of leadership, teamwork, communication and innovation was embedded in the hearts and minds of every student who participated. The success of the event is undoubtedly attributed to the hard work by the students and the undying support and encouragement by the faculty members.

IN THE CAMPUS

19TH NATIONAL SEMINAR

Divya Pichumani

Symbiosis Centre for Information Technology hosted its 19th National Seminar on 15th September, 2018. The topic of discussion was "Amalgamating IoT and Big Data: A Leverage to Data Analytics or an Adversary?" Students and faculty members gathered together in the SIC Auditorium to hear from some of the eminent leaders in the industry. The Chief Guest for the Seminar was Mr. Sameer Dhanrajani; Chief Strategy Officer at Fractal Analytics.

Dr. Dhanya Pramod, Director of SCIT, addressed the gathering after the traditional lamp lighting ceremony and gave insights on what to expect from the seminar. Mr. Dhanrajani took to the stage and spoke about the Industrial Revolution 4.0. He spoke at length about the journey from Descriptive Analytics to Prescriptive Analytics. He urged the students to make the world human first and not AI first. He also asked the students to challenge the status quo and embrace new technologies as they come.

The panellists then took to the stage to discuss on the role played by IoT and Big Data. The moderator; Mr. Gokul Alex, Associate Director at PwC introduced the audience to the topic of discussion. Mr. Sourabh Mukherjee, VP, Data Management Capability Lead and Solutioning Lead, IDAG at Accenture spoke about the affordability of data and that AI has become the new UI and emphasized that data veracity and data leveraging are two major issues that industries are facing today.

Dr. Sheela Siddappa, Global Head, Data Analytics, Bosch; used anecdotes from her time at Bosch to discuss the growth of Operational Data; both in terms of quantity and diversity. She also spoke about the multidimensional integration of IoT with Big

data analytics. Dr. Pradeep Bilurkar, VP, Machine Learning, Barclays shared his views on the progression of Robotics Process Automation in blending consumption of huge data with IoT.

Mr. Kapil Gandhi, Associate Director, Ernst & Young emphasized the need to inculcate story-building skills in order to move up the corporate ladder. At the end of the panel discussion, the students participated in an active Q&A session with the panellists. Interesting and thought-provoking questions on the importance of IoT and Big Data were raised by the students which was well appreciated and answered by the esteemed dignitaries on the stage.

Dr. Kanchan Patil, Deputy Director of SCIT thanked the Chief Guest, Dignitaries, students and faculty members for their active participation in the 19th National Seminar 2018 and making it a huge success.

GANESHOTSAV 2018

Haritha N

India is a land of rich cultural heritage and festivals are the integral part of it. Colours, lights, dashing new dresses and music are inseparable from the festivals. The month of September is when the festive season begins with the auspicious Ganesh Chaturthi. Symbiosis Centre for Information Technology celebrated Ganesh Chaturthi and welcomed Lord Ganesha to the campus on 13th September, 2018 with extreme joy and happiness.

The festival was celebrated for two days. The campus was beautifully decorated. The 'Green Ganesha' campaign was conducted as where the students made sculptures of Lord

Ganesh using clay. The user friendly idol was then decorated and worshiped by the SCIT family on the day of the festival. The students and the faculties gathered for the traditional aarti in the college atrium. The theatre club of SCIT, 'Eklavya' performed a skit on Women Empowerment leaving the audience awestruck by their performance. The second day of the festival started off with the pooja followed by the aarti.

The students and the faculties were served with sumptuous Maharashtrian lunch. Post the peaceful prayer and great food, there arrived the significant surge of the day, the Dhol Tasha. Students were dressed in ethic wears and danced merrily to the vibrant beats of the Dhol. Fun and excitement came to an end with 'Ganpathi Bappa Morya' echoing all over the campus.

GUEST LECTURES

LATEST TRENDS ON INFORMATION SECURITY

Manpreet Kaur

Data, just a simple word which means a piece of information. But are we realizing the amount of data we are generating? Every second, large amount of data is being generated. As per the recent research, it has been shown that on an average 2.5 Quintilian bytes of data is being generated each day. But, the question does not end here, it gives rise to a new question which asks how safe the data is?

These days companies have become data-centric because of which data loss has severe impact on the companies, sometimes shutting down of the businesses.

Security of data has become one of the biggest concerns for the organizations today. To address the same concern, Akshay Tiku, Director of EY, addressed students of SCIT on 7th September, 2018. He has been working with EY for 11 years now, and is the alumni of SCIT.

He initiated the session in one of the best ways, by comforting the audience and providing them a wide range of scope for interaction. Students were highly participative and flooded him with questions.

The main focus point of the whole session was the significance of information security these days and the criticality of it in the firms. Apart from that, he updated the students regarding the expectations of the industry when it comes to recruitment. He motivated many students by giving his own example. He said he was an average student. But, he never let his interest down that eventually helped him achieve what he wanted in life. He also mentioned that knowing about something is of less significance than knowing how to execute.

On the whole, he kept the entire session lively and shared various tips on how to develop oneself to become market-ready.

VAPT

Dhruti Luhar

A Guest Lecture on Vulnerability Assessment and Penetration Testing was conducted on 22nd September, 2018. Ms. Bhavna DK, working as Information Security Analyst at HSBC, the speaker for the day told that VAPT is a testing process to find security bugs within a software program or a computer network.

Ms. Bhavna DK instructed that three basic checks should be cultivated within the system to ensure network securities which are aligned as checking the open ports, on-going vulnerability services and analyzing the vulnerability. She also made the students aware about the Threat Modeling concept.

On a bright side, with the number of attacks increasing, she educated the students about a slew of tools such as Wireshark, NMap, ZenMap and many more to detect and stop malware and cracking attempts in the system. The session was quite inquisitive and well attended by students, as they will be the future testers and assessors in the malicious cyber world.

GDPR AND DATA PROTECTION BILL

Haritha N

A Guest Lecture on GDPR and Data Protection Bill was conducted on 29th September, 2018. Mr. Vikram Patil, Chief Privacy Officer, L&T spoke about the principles of GDPR and about the various clauses of India's proposed Data Protection Bill. The session started with Mr.Patil giving a brief introduction about the history of GDPR. The second half of the session was about the Data Protection Bill of India. He spoke about how GDPR has played a major role in setting up of the bill. He also highlighted the differences and similarities between the Data Protection Bill of India and GDPR. He explained in detail about what happens in case of a data breach; who is held responsible, who is the decision making authority and the penalty for the offence.

The session was a complete package of recent updates in the field of Information Security that fascinated the students. Diving deep into the happening topics made the students inquisitive. They asked more questions to the speaker which made the entire session lively and highly interactive.

QUANTUM COMPUTING

Dr. Mandaar Pande

Blog 2: Before I venture into explaining the concepts required to understand quantum computing, let me first talk a bit about classical and quantum mechanics. An understanding of quantum mechanics is important because every concept of quantum computing has its roots in this fundamental field of physics.

I'm sure all of us have heard of Newton's laws of motion. These were the laws that laid the foundation for classical mechanics. Classical Mechanics is a field through which the motion of everything that we can see and feel is based. For example, Lionel Messi's curling football kick into the net, the route of the sixer that Virat Kohli hits that is visually recreated by the IPL TV replays, the overhead badminton shuttle drop shot that P.V. Sindhu uses to wrong-foot her opponent, or the graceful lob that Roger Federer uses to keep his adversaries off balance can all be explained through the principles of classical mechanics. In addition to these easily understood events, the trajectory of a missile, the flight path of an airplane or rocket, the elliptic or circular path taken by an ordinary and a geostationary satellite, respectively around the earth, tides in our oceans, motions of the planets, the solar system, galaxies, can all be explained by using the principles of classical mechanics. So, in essence, classical mechanics describes nature at the macroscopic scale.

Towards the end of the 19th century, some extremely respected physicists thought that there was nothing new left to discover in physics. For example, Lord Kelvin, (a Scottish Mathematician and Physicist, also known as Sir William Thomson, who was instrumental in formulation of the first and second laws of thermodynamics, the ransatlantic telegraph project and a number of contributions in electricity. The unit "kelvin" of the absolute temperature is in his honor) stated in an address to a gathering of physicists in 1900 that, "There is nothing new to be discovered in physics now. All that remains is more and more precise measurement".A similar statement is attributed to the American physicist Albert Michelson.

However, at the turn of the century, things were to rapidly change in the arena of physics. All the phenomena that I just described above are of systems that are visible to the naked eye (or macroscopic, as I mentioned earlier). Some physicists were working on phenomena in systems at a microscopic scale. For example, the black-body radiation problem by Max Planck in 1900, photo-electric effect proposed by Einstein in 1905, the Rutherford gold foil experiments (through which scientists discovered that every atom contains a nucleus where all its positive charge and almost all of its mass is concentrated) and Compton scattering (in which light is scattered by a free charged particle resulting in a change in wavelength of the scattered light) are some of these microscopic phenomena. All these were fundamental concepts and experiments, and none of them could be explained through classical mechanics. This is when physicists realized that there was a need to generalize the theory of classical mechanics. Physicists including Max Born, Niels Bohr, Louis de Broglie, Werner Heisenberg, Erwin Schrodinger and Paul Dirac were the scientists who developed the mathematical formulations which helped in explaining these and a host of new phenomena which kept coming in through the first quarter of the 20th century. This was the theory of quantum mechanics. Thus, quantum mechanics is essential to understanding the behavior of systems at atomic length scales and smaller, also called the microscopic scale.

The beauty and test of any new theory is that under the old conditions, it should be able to yield all results of the old theory, since the original theory has been explaining the experimental results in its own domain. And indeed, all results of classical mechanics were proved by quantum mechanics when the systems being considered became macroscopic.

The Schrodinger Wave Equation: While the quantum phenomena that I mentioned above were important landmarks in the evolution of physics, physicists wanted a mathematical equation, which would help in explaining the experimental results and consequently govern the behavior of mechanical phenomena. In 1926, Erwin Schrodinger came up with a differential equation (a partial differential equation, to be precise) which was to replace Newton's second law of physics, F = Ma as the basic law of nature in mechanics. The mechanics which was based on this equation came to be called as wave mechanics and which is now also called as quantum mechanics.

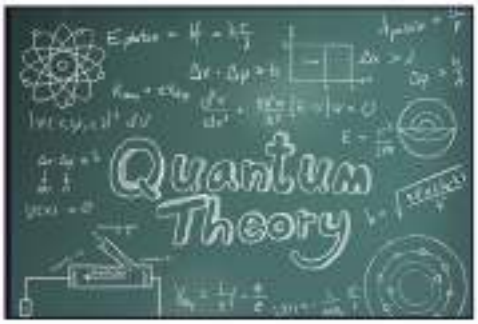
The equation is the following:

$$H\psi(r, t)=i(h/2\pi)\ (\partial\psi(r, t)/\partial t)$$

In this equation, H is the total energy of the system under consideration. $\psi(r, t)$ is a solution of the time dependent Schrodinger equation and called as a wave function. It is a mathematical function containing all the information that can be obtained about the system it represents. It is important to understand that whenever we solve a physical problem in physics, we will be using this equation, just as we use the second law of motion while solving problems in classical mechanics.

QUANTUM COMPUTING

Dr. Mandaar Pande



Now that we have a 35,000 feet view of some of the basics of quantum mechanics, let us define some terms which will come in handy while explaining the concepts of quantum computing.

Quantum system: This is the system that is being studied for quantum mechanics. For example, a system under study could be the hydrogen atom and the various energy states in which it can exist. You can immediately see that the system we have considered is microscopic.

Observable: In physics, an observable is any quantity that can be measured. For example, position, momentum, displacement, angular momentum, energy are all measurable quantities.

Measurement: Once a quantum system has been prepared in the laboratory, some measurable quantity (observable) such as the observables mentioned above (position, momentum, energy etc.) is measured.

Quantum State: A quantum state refers to the state of a quantum system. A quantum state provides a probability distribution for the value of each observable, that is for the outcome of each possible measurement on the system. In other words, any solution of the Schrodinger equation which provides information about the position, momentum, energy, or any other observable as defined above, constitutes a quantum state of the system. The classical equivalent of this is the intuitive understanding that we have of the state of a classical system which can be described by its position or momentum (for example the state of a cricket ball after being hit by Kohli can be described by its position and momentum or velocity at any instant of time). A mixture of quantum states is again a quantum state (which leads to the definition of the superposition given below). Quantum states that cannot be written as a mixture of other states are called pure quantum states while all other states are called as mixed quantum states.

Quantum superposition: Also called the principle of superposition, it is one of the fundamental principles of quantum mechanics. In classical mechanics, we can add two or more waves. In a similar fashion in quantum mechanics, we can add (superpose) two or more quantum states. And conversely, every quantum state can be represented as a sum or superposition of two or more distinct states. From a perspective of mathematics, superposition refers to a property of the solutions to the Schrodinger equation. Since the Schrodinger equation is linear (that is the wave function and its derivatives appear only in the first degree and not any other higher power for example 2 or 3 or higher) every linear combination of its solutions is also a solution of this equation.

Quantum Entanglement: One of the most unusual, counterintuitive and fascinating aspects of quantum mechanics is the fact that particles or systems can become entangled. Let's take the simplest case of two quantum systems. Let's denote the two systems as A and B. If these systems are entangled, it means that values of certain properties of system A are correlated with the values that those properties will assume for system B. Most importantly, the properties can become correlated even when the two systems are far apart in space – leading to the phrase spooky action at a

In my next blog, I will elaborate a bit more on the Quantum Entanglement as there is a lot of history involving the greatest Physicist of the 20th century, Albert Einstein. I will also briefly touch upon about the quantum computing architecture and its building blocks (quantum gates and quantum circuits).

References:

1.Images, courtesy the Internet

2.https://en.wikipedia.org/wiki/Quantum_mechanics.

3.http://iopscience.iop.org/book/978-0-7503-1206-6/chapter/bk978-0-7503-1206-6ch

4. Quantum Computing Explained, David McMahon, page 147, Wiley, 2007.

FACULTY BLOG

ACTIVITY BASED LEARNING

Prof. Krishnan Ramanathan

Activity-based learning or ABL refers to a variety of pedagogical approaches to teaching. The traditional way of learning is proving to be inadequate to offer the student the understanding, perspective and the ability that he/she needs in the highly competitive and dynamic environment. The main objective of ABL is that learning should be based on doing some hands-on experiments and activities. If a student is provided the opportunity to explore on their own and are provided an ideal learning environment, then the learning becomes joyful and the students remember the learnings for a long time.

There is growing demand with respect to the pedagogical techniques that focus on their immediate problems rather than depending on theories or even case studies. Corporate leaders have been placing demands to the business school to redesign the programs while they need skills to face the challenges. This approach provides a way to integrate learning within students' knowledge, and, by exposing them to a variety of activities, helps them learn to learn.

Benefits of Activity-based learning

1. Learning by Doing

It is a known fact that students' learn when they are actually involved in the activity. Tools like models, experiments, puzzles and role play methods are used to engage the students where they learn by being a part of the activity.

2. Facilitates Better Understanding

The traditional method of learning relies more on ROTE learning where the students just memorize the contents from the study material. Their understanding of the subject is judged based on their ability to reproduce their knowledge in the form of question and answers in exams. ABL, on the other hand, facilitates a better understanding of the subject by encouraging the student to complete the tasks at hand and the supervisor or the teacher can measure the students understanding based on the ability of the to complete the activity.

3. Engaging

Activity-based learning tools are extremely fun and engaging that help the students learn in unique and creative ways.

4. Sharpens Problem Solving and Analytical Skills

The activity-based learning model encourages students to be independent thinkers, analyze the task at hand, think critically and solve problems to come to the final learning which helps them develop their analytical and problem-solving skills.

5. Facilitates Learning Beyond Educational Environment

The skills learnt by the students helps them while facing scenarios outside the classroom when they start applying what they have learnt and are able to derive solutions.

6. Instills Confidence

Learning through group as well as individual activities increases their confidence. They learn to trust their understanding and skill-sets and are more confident in handling real life situations. Activity-based learning is one of the best ways of learning, especially in Business Management. Activity - based learning is assumed to be built on the rationale that management students learn best when are involved in action. Learning is then structured into activities that will facilitate what has to be learned.

STAR ALUMNI

PREETHKARAN J

Divya Pichumani

Star Alumni of September 2018 is Mr. Preethkaran J. He is currently working as the Director of Cyber Security at KPMG, Malaysia.

He completed his PGDM from SCIT in the year 2007 and completed his Engineering from Bharathiar University.

He started his career at EY and then went on to work as an Associate Director at PwC before joining as the Director at KPMG. His certifications include CISA, ITIL V3 Foundation and Six Sigma Yellow Belt, PMP and RSA Security Analytics.

His perseverance in the field of Information Security has enabled him to reach these heights.

His success stories motivate fellow SCITians to deliver their best efforts always.

TEAM WEB AND MEDIA

Faculty Mentors

Prof. Dr. Brijesh S. P.

Prof. Vidyavati Ramteke

Student Members

Akhil Nair
Web Developer

Alan Pinto
Social Media

Ambika Singh Kelwa
Photographer

Amit Khandebharad
Writer

Amol Waghmare
Designer

Anandam Roychowdhury
Photographer

Ankita Singh
Designer

Atul K
Video Editing

Bansari Pandya
Designer

Bipin G Dhotre
Photographer

Dhruti Luhar
Writer

Divya Pichumani
Writer

Elaine Fernandes
Photographer

Gaurav Kandpal
Designer

Ghanshyam Savaj
Web Developer

Haritha N
Writer

Harshita Priya
Social Media

Jay Bhimani
Social Media

Madhumita Chatterjee
Web Development

Manpreet Kaur
Writer

Mayur Salpal
Video Editor

MD Sadaf Aqubal
Social Media

Mohini Madhur
Photographer

Mona Pounikar
Web Development

Moutrishna Ray
Designer

Nikhil Borse
Web Development

Nimisha Singh
Designer

Nipun Koichade
Photographer

Pamika Singh
Designer

Ptyus Ranjan Pradhan
Video Editor

Priya Das
Web Development

Priyanshu Ranjan
Photographer

Ragini Tahiliani
Designer

Rajesh Munnaluri
Photographer

Ria Chaudhari
Social Media

Roshan Tawar
Designer

Rupen Suryavanshi
Web Development

Sarvagna Mahakali
Designer

Satyajeet Malgaonkar
Video Editor

Sharbani Basu
Social Media

Shayon Mukherjee
Designer

Shrita Karmokar
Writer

Shubh Mehra
Social Media

Shubhanjali Sharma
Web Development

Srushti Mahabole
Designer

Soumya V Ganesh
Writer

Vidhi Saxena
Writer