ATHARVA

EDITOR'S CORNER

Shyam Gawade

The month of November marked the beginning of new semester for the students. Students got an opportunity to gain certain life skills and team building skills at Symbiosis School for Sport Sciences at Lavale campus via various sports and activities.

A guest lecture was organized on Block chain. It helped the audience to gain insights of various applications of block chain. Also, a guest lecture was conducted by Cummins which provided insights to students on corporate life. Later, Dattansh, the Annual Analytics Conclave helped students to gain incredible insights of the world of data and the current technological trends.

The TEDx theme was revealed for the upcoming TEDx SIU Hinjewadi. The event facilitated an open mic along with dancing, poetry and standup comedy. A Thalassemia workshop was conducted at the end of the month by association with Thalassemia Society, Pune which created awareness among the students of the genetic blood disorder.

Tune in through the magazine to know more about the events. The Web and Media team hereby presents the 32nd edition of Atharva maganize.

What's Inside

SPORTS AND LIFE SKILLS PROGRAM

Simran Gupta

A well-structured two- day program, enriched with sports activities was organized for students of SCIT batch 2019-21 at the Symbiosis International University Campus on 7th and 8th of November 2019 at Lavale. It was not just a ical physical drill; it was packaged with an underlining meaning to it.

On day one, Sports co-ordinators at Symbiosis School of Sports Sciences (SSSS) had planned seven sports activities with little twists and modifications and made it more intriguing than usual; every team was supposed to play each and every single one of them. The activities included Blanket Volleyball which was fun to play as its name suggests, Foot Cricket, Seven Tiles, Frisbee, etc. which was nostalgic as it brought back childhood memories. It was not only about sports but also about learning from these sports certain key lessons like team building, teamwork, co-operation, co-ordination, leadership, importance of communication, etc. The 2nd day took off with very enthusiastic, laughing faces and a fun-filled warm-up session. Various fun and exciting activities were included like water-balloon games, finding treasure in the swimming pool, and a selfie with a specific coloured flower, talent showcasing videos and much more. The event wound up with another activity which saw teams creating a dress using organic waste material and paper in order to dress up their models which was executed efficiently.

A thrilling and exciting experience came to an end with value-adding learnings and a lot of memories. The program aimed to impart the importance of physical fitness and valuable leadership lessons to the students. The co-ordinators as well as the participants ensured that the two-day program turned out to be an amazing experience which will be cherished for a lifetime.

DATTANSH'19

Shrutika Kulkarni

Dattarish - the data analytics conclave was held on 23rd November. It mainly revolved around the evolution of data. As the current era is the age of data or the "Data Yuga"; where everything is about data. The conclave revolved around the fields of Data Sciences and Data Analytics. Insights from data is being used in decision making, building smart vehicles, robots and powerful systems. We had industry experts who shared their views on the Data Age.

The keynote speaker of the day was - Mr. Anand Yashwanth. He explained the importance of Artificial Intelligence. He highlighted the fact that AI plays a major role in the business. AI has become the integral part of any organisation. Nevertheless, he explained the constraints of AI too.

The second speaker of the day was- Mr. Vishesh Agrawal. He briefed us about the technicalities of data science in different sectors. He also explained about a product named Vchip: Crop Monitor, which helps the farmers in many ways. One of the ways is by allowing the farmer to monitor the farm. And, he concluded the speech by advising students to invest in new technologies.

The third speaker of the day was- Mr. Gaurav Chadha. He highlighted the students on the concepts of Lean and Six Sigma. He introduced the students to a new topic named "Gemba", which means place created in a particular field. He emphasized on a few tools used in business organisation.

The fourth speaker of the day was- Mr. Sanjay Hingorani. He spoke on the significance of the influx of data which led to the proliferation of data driven product development. He also explained about the product life cycle and growth of data in each phase. He concluded that there is a huge influence of data on any business decisions.

The fifth speaker of the day was- Mr. Vikash Singh. He shared major insights about the phases of analytics by stating an example about sentiment classifier from Microsoft Azure. He elaborated on the phases of data sciences and the time consumed. He suggested students few skills like AI, big data, R, Python which will help them in their career.

TEDX SIU HINJEWADAXI THEME LAUNCH

Shyam Guwade

The theme for TEDx SIU Hinjewadi 2020 was revealed on 26th November 2019. The theme is Shadow to Spotlight. It revolves around the concept of people who worked diligently in shadow without thinking of the fame i.e. the spotlight. It can be also interpreted as how people work in a different and efficient manner to emerge in the spotlight. TEDx, an independently organized TED event, invites guest speakers to deliver their insights on various topics which can enhance a person's perspective of social and professional life. It is scheduled on 4th January 2020.

The team took great initiative to ensure that the audience enjoyed the event. The event was organized at the Sundial (Graffiti circle) in Symbiosis Infotech Campus. An Open Mic was organized as well. Many students from the audience participated with great enthusiasm. The various performances included dance, poetry and singing. The students also got a chance for storytelling and standup comedy. The students who participated got a chance to showcase their talent through the open Mic platform. The crowd enjoyed and cheered their performance. The KONNECT team provided an enthralling performance. The students of all three campuses actively took part in and got a chance to showcase their talent during the theme launch.

The event was truly successful! The entirety of the Symbiosis Infotech Campus now looks forward with great enthusiasm for the TEDx event.

GUEST LECTURES

BLOCKCHAIN: THE DISRUPTER OF TOMORROW

Akash Sagar

On the 13th of November 2019, Dr. Vidy Potdar, Director, Blockchain R&D Lab at Curtin University, Perth, Australia conducted a guest lecture on the topic of blockchain technology and its practical applications. The session was very informative and informative as Dr. Vidy expertly charted a course through the myriad concepts of blockchain technology starting from what it is, to how it can be used to revolutionize and shape the businesses of tomorrow. Dr. Vidy spoke at length about his mission at the Blockchain R&D lab at Curtin University, which was set up in 2019; the lab was set up in order to provide cutting edge research, development, consulting and education services in the field of blockchain applications.

He took the time to educate us about the basics of blockchain; from the constituents of each block in a blockchain to the concept of proof of work and how it helps contribute to the infallible nature of the distributed nature of the blockchain. A section was also dedicated to explaining why people and businesses started adopting blockchain only in the late 2000s even though the underlying concepts and ideas existed in the early 1990s. This time gap can be equated to the following three reasons: Vast improvements in Technology, Improvements in Storage devices specifcally with reference to capacity and Accessibility and penetration of the internet.

Dr. Vidy treated the audience to a practical demonstration of how a blockchain operates, this was supplemented with his attempt to demystify blockchain and debunk the many myths that are prevalent around the topic, the main two myths being

1) Blockchain is equivalent to Bitcoins, and

2) Blockchain is very energy intensive.

He also shed some much needed light on his work with the Blockchain R&D Lab, and provided a glimpse into all the possible industries which can and will be disrupted by blockchain in the near future this list included the domains of banking, supply chain management, cyber security, insurance, networking and IOT, governance and online data storage.

Dr. Vidy concluded the session by answering questions posed by the faculty and students, while also reminding us to focus on how we can utilize blockchain to solve problems emerging in the modern world.

A SESSION ON LEADERSHIP AND CHARTING ONE'S PATH IN ORGANIZATIONS

Ashutosh Godasara

On the occasion of Children's Day, a guest lecture was scheduled for the students of SCIT. The guest speaker being Ms. Binu John, Vice President, Cummins Business Services. This guest lecture focused on how the students can be good leaders. She started the guest lecture by talking about how the students who start their new jobs complain about the extra hours they need to put in. She believes that the students should take this as a learning opportunity and try to grasp as much as possible.

Ms. Binu also stated that even after 25 yea-rs of working in the industry, hard work is still one of the things that she hasn't let go of. There might be many opportunities that will come across, but it's up to the students to decide if they want to pursue that path or not. She said that you shouldn't do something that doesn't excite you, you need to be sure of what you want to do. She also talked about failure and how the students will need to learn how to accept it. She gave the example of two types of people, where one of these see failure as a huge setback and the other category sees it as something that is a part of their journey.

Ms. Binu answered many of the student's doubts regarding whether they should be focused on a straight path or should be flexible. She said that both of these have their own advantages and disadvantages and one cannot justify one to be better than the other. She talked about how an organization is different from college life. One needs to follow a certain code of conduct or decorum that is laid out by the organization and try to be as professional as possible. Towards the end, she asked the students what topics the students would like to know more about so that she can arrange the specific people to give the guest lectures respectively. This guest lecture was very informative and helpful for the students as they got to learn the different aspects of how to be a good leader and how important communication is, in an organization.

GUEST LECTURES

THALASSEMIA AWARENESS: THE NEED OF THE HOUR

Akash Sagar

society and a thalassemia patient spoke at length about the struggles she faced while growing up and how she let nothing stand in her way of achieving her goals. She served as a great source of inspiration of us all by telling us how we must never let anything stand in our way and how we must learn to cultivate a winning mentality.

Thalassemia is a genetic blood disorder that causes an individual's body to create an abnormal form or an inadequate amount of haemoglobin, which directly results in a large number of red blood cells being destroyed in the body, thus the individual develops anaemia. In order to address the need for awareness on this subject matter, Dr. Nita Munshi, Director of the Department of Laboratories at Ruby Hall Clinic group of Hospitals, President of Thalassemia Society, Pune conducted a Thalassemia awareness session at SCIT on 30th November 2019.

Dr. Nita, who has devoted her career towards helping and treating patients of thalassemia, explained in great detail about the actual causes of thalassemia, what it does to one's body, the treatments that are currently in practice for this disease and the intense pain and inconvenience and patients and their families have to go through. This entire ordeal is financially draining on the families involved, as the patients require monthly or weekly blood transfusions in order to ensure that the individuals can continue on with their lives. The primary concern which we as a society must address is the spreading of the awareness about thalassemia, its effects and demystifying the plethora of misconceptions that surround thalassemia.

Dr. Nita was quick to tell us about the two

common types of thalassemia (major and minor) and how it is transferred from parents to children. She urged us, thalassemia. Dr. Nita was quick to tell us about the two common types of thalassemia (major and minor) and how it is transferred from parents to children. She urged us, as individuals, to go out and spread the information we had been given about thalassemia amongst our friends, family and loved ones, so as to ensure that we become more aware as a population.

Ms. Priya Vaswani, a member of the

Dr. Nita Munshi on behalf of the Thalassemia Society, Pune urged us to be active participants in achieving their mission of no thalassemia births by 2020 and called on us to help see this through on all accounts by acting as agents of thalassemia awareness and ensuring this message receives wide reach. The session served to drive home the importance of knowing one's health and above all; enabled us to gain a clear understanding of the condition of thalassemia.

FACULTY BLOG

QUANTUM COMPUTING

Dr. Mandaar Pande

This is the sixth in a series of blogs that I will be writing for everyone to get a basic understanding of this immensely important research field which is poised to become mainstream in a few years and significantly impact our daily lives.

In my previous blogs, I gave a high-level view of some fundamental differences between classical computers and quantum computers, and started off with some basic concepts of quantum mechanics which are needed for building quantum computers in blog 2. I gave a brief overview of quantum superposition, quantum entanglement and quantum gates in blogs 3 and 5. In blog 4 I set a context about why Quantum Computers are important for the future. So, for those of you who want to get up to speed on Quantum Computing, it may be good to go through the earlier 5 blogs.

I am writing this blog after almost a year. In this time, a lot of water has flown under the quantum computing "bridge", if I may use that expression.

Especially in October this year, there was an astonishing announcement by Google (while numerous universities, governments and private organizations/industries have been working on quantum computing for the past decade or more, such an announcement was long awaited and expected from one of the two industry giants working in the Quantum Computing space, namely, Google and IBM). This announcement was regarding Quantum Supremacy. So, let's jump into it.

Quantum Supremacy, as the phrase suggests, would mean that something about "quantum" has triumphed over the conventional (also called as digital or classical) way of doing things. As the definition of Quantum Supremacy, given in Wikipedia, states:

In quantum computing, quantum supremacy is the goal of demonstrating that a programmable quantum device can solve a problem that classical computers practically cannot (irrespective of the usefulness of the problem).

In simple terms, what the above definition means is that if one is able to identify a problem that a quantum computer can solve in a very short time duration which a classical computer would take a very long time. Let's quantify what we mean by very short time and long time by referring to the work that the Google and NASA teams have done. In the quantum supremacy paper that Google and NASA have published (Oct 24th 2019), the scientists developed a 53-qubit quantum computer and sampled one instance of a random quantum circuit, a million times. The quantum computer took 200 seconds to execute this task, while the best know state-of-the-art classical super-computer would take approximately 10,000 years!! So, I guess we are now clear about very short time and long time.

Let me now give a brief summary of the paper. Scientists working on the Quantum Supremacy problem had to accomplish the following tasks.
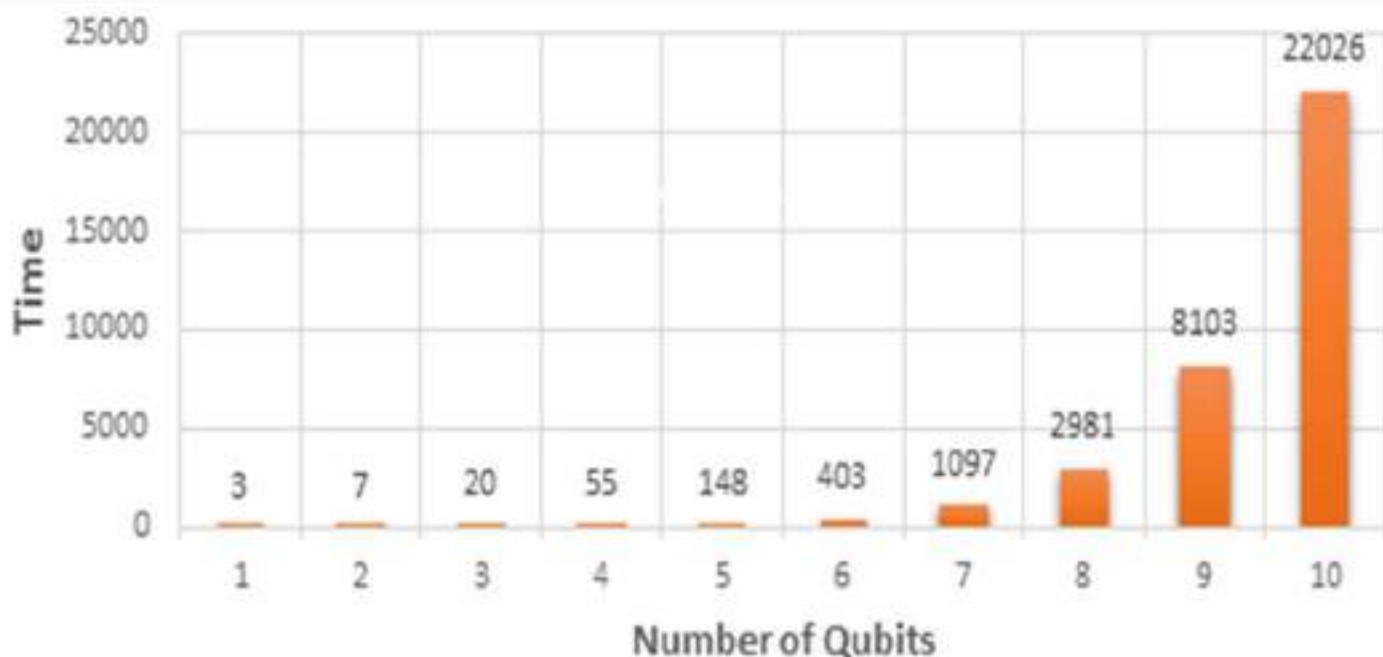
FACULTY BLOG

QUANTUM COMPUTING

Dr. Mandaar Pande

1. First, they had to design and develop a quantum computer which would have a large enough number of qubits with low error rates and be capable of executing an algorithm.

2. Secondly, they had to identify a problem which would be easy to execute on a quantum computer, but hard for a classical computer to execute.

The scientists were able to successfully overcome both these challenges and achieve quantum supremacy as we shall see below.

To address the first task that I mentioned above, the scientists had to come up with new technical advances. They developed a 53-qubit quantum computer.

In doing this, they were able to provide breakthroughs in quantum error correction. (For those who are comfortable with technical jargon, here's what the scientists successfully designed and developed.

First, they developed high-fidelity gates which were executed simultaneously across a two-dimensional qubit array. For calibrating and benchmarking the quantum processor, the scientists came up with a new tool: cross-entropy benchmarking.

Finally, they used component-level fidelities to accurately predict the performance of the whole system).

To address the second point, which is to identify a task that would be easy for a quantum computer to execute, but very difficult for a classical computer, the scientists chose to sample the output of a pseudo-random quantum circuit. The reason for choosing a system consisting of random circuits for benchmarking is because a random circuit does not possess any structure and therefore, can be a very difficult problem to solve for classical computers.

The best-known classical algorithm which can simulate a quantum random circuit needs an amount of time which scales exponentially as the number of qubits increase. So, this essentially is a very brief summary of this wonderful paper from Google and NASA.

It will be good learning for those keenly interested, to read the complete paper. In my next blog, I will touch upon Quantum Computing in the NISQ era.

PS: The meaning of an exponential increase in time as a function of the number of qubits can be easily understood by the equation and its corresponding graph on the previous page.

$$Time = exp(no \ of \ qubits)$$

As the number of qubits increase, the time to simulate the random quantumcircuit increases exponentially.

STAR ALUMNI

MONIKA MALIK

Simran Gupta

The Star Alumni of this month is Monika Malik currently working as an Associate Director at KPMG for last 4 years and also worked previously as a Consultant with KPMG. She has completed her Engineer's Degree (Honors) in Information Technology from Kurukshetra University. With more than a decade of experience, she has worked with Capgemini Consulting as Senior Consultant for a year. She has also worked with Vakrangee Software Limited as a Manager and as an Executive at Computer Concepts. She has worked in various sectors including Banking, Government and Private. She has commendable skills in Management Consulting, Business Analysis, Requirement Analysis and Business Development, and Business Process Improvement. She also cares about social causes and has been a volunteer for Swachhathon 2016 in association with KPMG and also volunteered for Educational Visit to Nehru Science Centre with school children in association with KPMG in 2019. She has received numerous awards and honors in her career for her commendable skills in the corporate world. She has received "Above and Beyond Award", "Super Team Award" and" Kudos Award" for an exceptional performance. We are very proud to call her our Star Alumni of this month.

TEAM WEB AND MEDIA

FACULTY MEMBERS

Prof. Dr. Brijesh S. P.   Prof. Vidyawati Ramteke

STUDENT MEMBERS