

**Silicon**

*... beyond teaching*

# SLATE

SILICON LANGUAGE FOR ARTS TECHNOLOGY & EDUCATION

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Our Mission : To provide the best of technical skills, professional ethics and human values in enriching the disciplines of Science, Engineering and Technology for social development and Nation building



## OUR ACHIEVEMENTS

Students of Silicon participated and won prizes in CodeCamp 2017 organized by Infosys, Bhubaneswar. Two of our teams won the 1st and 3rd prizes. Silicon congratulates the proud winners.



Padmalochan Panda of 6<sup>th</sup> Sem. CSE and Aastha Gunjan of 6<sup>th</sup> Sem. IT have bagged the 1<sup>st</sup> prize



Priyatosh Sahu and Suman Udgata from 6<sup>th</sup> Sem. CSE have won the 3<sup>rd</sup> prize.



Participants from NIT, IIT, KIIT & SIT in CodeCamp 2017 organized by Infosys

## *From the Editor's Desk...*

*Dear Readers:*

*I feel happy to inform you that Silicon is once again making preparations for soaring to greater heights and achieving new feats of success. We are all set to add a few more feathers to our cap. Our pursuit for academic excellence will have new dimensions added to it with the upcoming NBA (National Board of Accreditation) visit scheduled on the 6th, 7th and 8th April 2018. The NBA is an independent body that is responsible for the accreditation of technical departments of institutes with parameters based on the Washington Accord. The NBA accreditation will add greater value to the Institute and to the courses offered, with an international acclaim for the students.*

*Our students should by now realize that they should start applying their classroom learning to real life situations. Self-study and updating their knowledge is very essential to stay competitive and become successful. It is the combination of awareness, knowledge and training that makes one a professional. A lot of hands-on-training is required not only to help students excel in their field of work but also to make them confident professionals. Our present generation should feel proud that they are born in a time when information is readily available. It is a generation that takes pride in being owners of smart technologies. So, use this smartness to enhance your skills. Let these technological possessions not possess you. Rather, you master them for societal developments. Engineers in this sense shoulder a greater responsibility of building a world where human efforts build human confidence in overcoming the hurdles of life.*

*In this issue of SLATE we have added a few special features. Our team of students interviewed some very eminent people during the ICIT-2018 meet in Silicon. The team also had the opportunity to interview an eminent professor from Daemen College, in Amherst, New York, who was on a visit to Silicon. Our team has also interviewed a man of repute from the world of films and theatre with whom they spent an evening discussing issues about his area of work. The special features along with the student articles, the regular features and the news items add a flavorful touch to this newsletter. Hope you enjoy reading this issue of SLATE and find it informational too.*

*Happy Reading!*

Ananya Roychoudhury  
ananya@silicon.ac.in

## Elon Musk - The Explorer



Elon Reeve Musk, the South African born American business magnate is considered to be one of the greatest industrial minds of the 21st century. Born on June 28, 1971 this engineer turned billionaire entrepreneur is involved in an astonishing number of technologically innovative projects. According to Forbes, on December 2016 he was ranked 21st on the world's most powerful people list and recently on January 2018, Elon was listed as the 53rd richest person in the world with a net worth of \$20.9 billion.

In his childhood, Elon was an avid reader. Teaching himself computer programming at the early age of 12, he created a game called Blaster. During this time, he showed his first sign of entrepreneurship when he sold his game to a computer magazine for \$500. Again in the late 90's he showcased his skills when he founded a company which eventually became a famous online payment organization worldwide called Paypal.

In 2002 Paypal was sold to Ebay for \$1.5 billion of which Elon received \$165 million. With this net amount he was able to fund another venture called SpaceX which is the largest private producer of rocket engines in the world whose ultimate goal is to reduce the cost of human spaceflight by reusing rockets. The company started on relatively small scale with only launching prototypes. But after three failed attempts and getting nearly bankrupt the company was finally able to successfully launch and land a real rocket which in turn got them a partnership for spaceflight from NASA. Since then the company have launched again and again, breaking a number of records and becoming the 1st commercial company to launch and dock SpaceX Dragon vehicle to International Space

Station. Musk also stated that he has a vision of establishing a Mars colony in future.

Elon is also focused in creating a better future for earth. Musk had changed the financial industry but now he wants to change the course of humanity. This leads us towards his other company the Tesla Motors, one of the most advanced automobile companies in the world. Tesla Motors was first to built an electric sports car, the Tesla Roadster in 2008, followed by Model S and Model X keeping the goal to dramatically reduce the use of fossil fuels which has a great effect on our environment. Along with electric cars the company also specializes in energy storage and residential solar panels under the name Solarcity. Elon Musk has also disclosed a concept called Hyperloop, a revolutionary new transport system that theoretically could send people to their destination in almost supersonic speed. With projects such as SpaceX, Solarcity, Hyperloop under his name, Elon Musk is taking humanity to a new level. And his recent plans to provide worldwide broadband access with the help of satellites has provided a platform for people to effectively use resources in their day to day lives. With these great achievements and ideas on hand, it's really difficult to predict what else Elon Musk has up on his sleeve for the human civilization. Elon Musk teaches us to have a sensible, pragmatic approach towards our goal. His belief is that one should love what they do and work hard while not getting deterred by failures.

Preetika Patra  
*EEE, 4<sup>th</sup> Sem.*



## Changing Behaviour of Migratory Birds

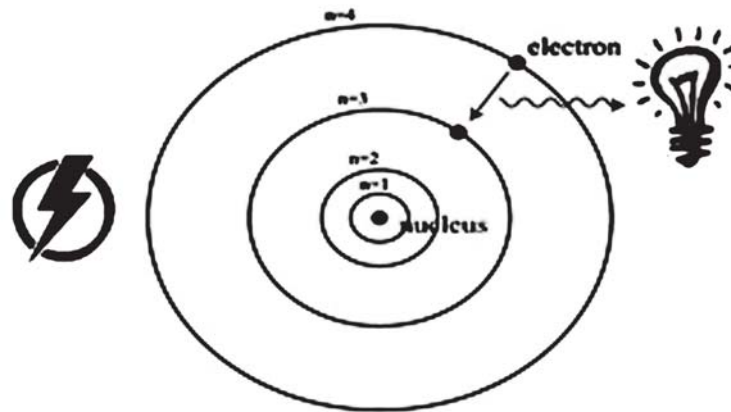


World migratory bird day is celebrated on May 10th every year which raises awareness for the conservation of migratory birds and their habitats. In 2017, WMBD had the theme "Their Future is our Future - A healthy planet for migratory birds and people", which focused on the need for sustainable management of our natural resources, demonstrating that bird conservation is also crucial for the future of humankind. Migration is the seasonal movement of birds from one part of the world to another. They move to other area to improve their chances of survival, usually because its climate provides a better environment for feeding. If birds would not migrate, then food supplies in their ranges would rapidly deplete during the nesting season, and many chicks and adults would starve. Predators would be attracted to the high concentrations of breeding birds too. The Indian subcontinent plays host to a number of migratory birds in summers as well as winters as over a hundred species of migratory birds fly to India. There are two types of migration - Long distance and short distance. While short-distance migration probably developed from a fairly simple need for food, the origins of long-distant migration patterns are much more complex. They have evolved over thousands of years and are due to weather, geography, food sources, day length, and other factors. Migration of species such as storks, turtle doves, and swallows was recorded as long as 3,000 years ago. Migrating birds can cover thousands of miles in their annual travels. The Arctic tern *Sterna paradisaea* has the longest-distance migration of any bird, and sees more daylight than any other, moving from its Arctic breeding grounds to the Antarctic non-breeding areas. Many birds like Siberian Cranes, Greater Flamingo, Ruff and Black winged Stilt prefer to fly at a higher altitude while migrating. In Siberia, it is very cold, food is scarce and day light is short during

winters. Siberian cranes migrate to Keoladeo National Park (KNP), in Bharatpur, Rajasthan during winters travelling a distance of 5,000 km from Kunowat river in western Siberia. But human-induced climate change has begun to affect our planet and the organisms that live on it. Many migrating birds are very sensitive to environmental changes and are already being affected by climate change. Increasing temperatures, changing vegetations and extreme weather conditions lead to significant changes of the birds' essential habitats. In many cases these are likely reasons for the decline of bird populations and changes in migration patterns. Increased storm frequency, lowered water tables, higher drought frequency, sea level rise and habitat shifts resulting from climate change could all have a dramatic impact on migratory birds. One of the major effects of climate change is the loss of habitats. For this reason there has been a drastic decline in the number of Siberian cranes visiting Keoladeo National Park over the years. From 200 birds in 1964, their numbers crashed to 100 in 1967. In 1993 only five birds were sighted and none in 1994 and 1995. The last sighting of Siberian Crane in India was way back in 2002. Rosy Starling, a migratory bird from east Europe marks the arrival of winters in Surat. Earlier more than 40 species of birds used to migrate but this has declined to 10 to 15 species. A team from environmental NGO stated that some of the villages like Narthan and Ambheta were the two favourite spots for the migratory birds but construction works has affected their habitats. Birds may not be able to track rapid climatic changes. New and challenging research problems present themselves continuously and the study of bird migration will continue to be a lively research topic.

**Akampan Gupta**  
*ECE, 6<sup>th</sup> Sem.*

## Atom to Phantom



The above figure shows the configuration of a simple Hydrogen atom, that has one and only one electron. The electron revolves round the nucleus in the lowest orbit in its stable position where P.E. = 27.2eV. (The total energy in the first orbit is = P.E. + K.E. = -27.2+13.6=-13.6eV). Every now and then, it gets excited to higher orbit. It knows that the smaller circle is the part of larger circle so, when it moves in smaller plane that doesn't mean it leaves the smaller plane.

But in the lowest orbit the electron is pulled down with maximum force. (Anybody tends to be stable in lower levels when its potential energy is minimum). And the electron continues to move forever in the smaller circle only though it has burning desire to rise! However, if the electron gets an energy of 10.2eV ( $13.6 - 13.6/2^2$ ), it will jump to the second orbit. Then it sees another circle much bigger gets excited but requires only  $-13.6/3^2$  i.e. 1.52eV of energy to reach the third orbit. Thus, energy it requires to get motivated or moved to next orbit decreases exponentially. (By Bohr's Formula =  $-13.6z^2/n^2$  eV and  $Z=1$  for Hydrogen)

For example, it requires only  $13.6/10^2$  eV i.e. 0.136eV of energy to leave the 10<sup>th</sup> orbit. Then onwards a small energy anywhere would put it to the next orbit and it starts jumping from 10<sup>th</sup> to 15<sup>th</sup>, then to 20<sup>th</sup>, then to 30<sup>th</sup> and then to 50<sup>th</sup> and within a short time it reaches a stage where electron becomes electricity. Only when the highly overcharged electron is transformed to positive ion or electricity, a lamp can give light, a fan can work or any electrical or electronic gadget in the world like TV, Computers, Transistors, Microprocessors can function. Thus, for the services of the electron to be utilized by the whole world, the first condition is it has to leave the first narrow orbit in which it moves!

Dear Friend, you are like the electron with an immense potential to serve the world in a great way. But, the only hurdle for you to become great is the smaller and narrow circle in which you are living. The small circle could be a language

circle or a circle of cheap and narrow thoughts or a caste circle or religious circle. Every now and then we are wise enough to get excited to move in higher planes but this narrow circle drags us down. But if someone can impart the energy of 10.2eV we'll leave the narrow circle and then on within no time we'll reach highest planes and suddenly one day the whole world will be utilizing our services and our names will be permanently written on the sands of time as a trend setter, as an exemplary personality.

So, if we will get a sudden push or inspiration in life, we can also fly high in life. Like once Gandhi's friend presented a book to him. The same night he completed the book and wrote in his autobiography "One book that changed my life completely is 'Unto the Last' By Ruskin Bond. In the same way Leo Tolstoy in the greatest book of the world 'War and Peace' wrote 'One book that informed me, reformed me and transformed me is 'Unto the Last' by Ruskin, the gist of which in one sentence is 'Any person who lives for the common good of the society is bound to become great and successful.' One book or sometimes one quotation of a person or a touching movie or any insult by your friend or a sentence by your teacher may impart 10.2eV of energy to you and motivate you to reach great heights. You should also be excited enough to extract that elevating energy out of your life.

The way electron is transformed into electricity, you will also be one day the matter of the world spreading your light and aroma everywhere. Each one of us carries that urge to lead an exemplary life leaving footprints for the generations to follow. However, the electron emits light only when it comes to lower orbits. That is why Vivekananda rightly said that a great teacher will always come down to the level of masses or ordinary students to impart his knowledge. So, Be the electron and illuminate the way of others.

Rishav

ECE, 2<sup>nd</sup> Sem.

## Multiple Intelligences



Multiple intelligences is in itself a concept, a theory. If we go on to have a look at this theory, we would realise that intelligence has been divided into specific domains, rather than being considered as being dominated by a single general ability. The propounder of this theory, Howard Gardner (Harvard University), says that there are multiple types of intelligences in humans, each representing a different way of information processing. Worldwide, 8-9 categories have been constructed. One such is musical intelligence. Musical intelligence enables individuals to produce and make meaning of different types of sound. Naturalistic intelligence refers to the ability to identify and distinguish among different types of plants, animals, and weather in the natural world. Logical-mathematical intelligence describes the ability to make calculations, and solve abstract and various kinds of problems. Verbal-linguistic intelligence refers to an individual's ability to analyze information and produce work that involves oral and written language, such as speeches, books, articles, etc.

There is also intra and interpersonal intelligence, where relating one's moods, behaviour, psychology, with others take place respectively.

One good example can be the case of a student and a teacher. The teacher was trying to teach him fractions but he just seemed unable to grasp theory, until the teacher adopted the graphic and creative method of

using orange slices as FRACTION of oranges. Maybe, presenting the information in a completely different way or providing new options for student mind provided the graphic story, which his mind blossomed well with.

So, this is the concept about different abilities of the mind. Some children may learn the flute fluently at the age of 4, some may have enormous grasping ability on the basis of relating graphical studies fast and effectively.

Factors like brain isolation by brain damage (where some areas of the brain may get hyperactive), experimental psychology, evolution and development aid multiple intelligences.

Multiple intelligences must not be confused as learning styles, as they represent different intellectual abilities, and not just different methods of learning a particular thing.

This profound theory finds ample scope in the learning fields today. Teachers' understanding of the abilities of a student's brain can help a great deal in improving the learning process. Teachers can devise activities in such a way that will suit a learner's grasping ability. Knowing about multiple intelligences and knowing one's own mental abilities, exercising and practising it helps add value to ourselves.

**Disha Kumari**  
CSE, 4<sup>th</sup> Sem.

## From Fatness to Fitness

I am Mahip Singh Kakan, an 8<sup>th</sup> semester student. I was obese, weighing about 119 kgs before I embarked my fitness journey and lost about 51 kgs, and now I weigh 68 kgs.

It took a longer time than usual because of the trial and error approaches to know what worked for me and what did not, as being a student and having lack of resources, I could not afford a dietician or a personal fitness trainer.

I wish to share my experience with you through this article so that you don't have to play the tedious game of trial and error!

So here, I will share some of the facts I wish I knew before I started my weight loss journey in the form of (frequently asked questions) FAQS that are usually asked to me.

**Faq-1:** Which crash diet plan I should follow?

Ans: Crash diet plans help you to lose weight fast - 2-3 kgs in a week - but that is usually water mass that can be easily gained. Once back to a normal lifestyle, it becomes demotivating if you want some serious permanent weight loss. So, try to indulge in a healthy diet plan that you can stick to throughout your life.

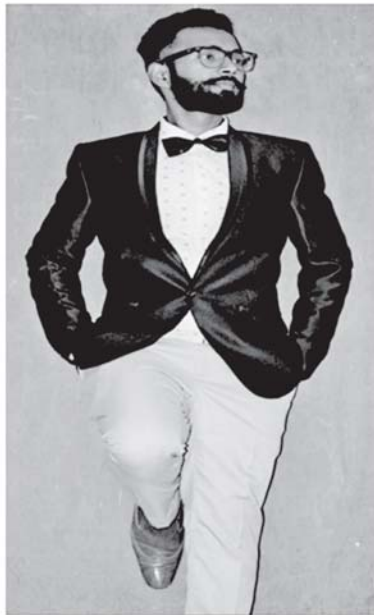
**Faq-2:** What kind of food should I eat?

Ans: No one wants to look skinny with poor muscle tone, so you need to put on muscle while losing fat and this can be accomplished by eating low carb high protein diet.

Actually, when you are eating high carb foods like rice, that is giving you the energy fuel for your workout and thus your body is not able to burn fat to produce energy. When you eat low carb your body gets into the state of ketosis and starts burning fat to produce energy - this is the principle on which Keto diet is developed!

**Faq-3:** What kind workout regime should I follow?

Ans: High-Intensity Interval Training is the workout regime that has helped me to lose fat by gaining muscle at the same time. There are apps like 7 minute and others that



you can use at hostel or home without hitting the gym.

**Faq-4:** How to maintain weight without losing muscle mass while living in the hostel?

Ans: Intermittent fasting is the best option that is scientifically proven in which you have an eating window of about 8 hours in a day; it has helped me not to gain weight despite being a mesomorph.

**Faq-5:** I want to lose

face fat and have a chiseled jawline or lose love handles aka abdominal fat!

Ans: "Spot reduction is a myth". If you chewed hundreds of chewing gum a day like a cow or do a hundred crunches nothing is going to help to get rid of your double chin or belly fat, if your complete body fat is not decreased.

**Faq-6:** Does counting calories make sense?

Ans: If you want to lose weight then "yes", you should be eating a calories deficit diet but keep in mind that calories in a candy is not same as the calories in a banana, so you have to make smart choices and also try to boycott white sugar as much as possible as they are also known as empty calories eg.-cold drinks.

**Faq-7:** I am working out hard but not losing weight?

Ans: Your goal should be to lose fat and to gain muscle mass so that the weighing scale might not be true indicator rather than use fat calipers to calculate body fat percentage.

**Faq-8:** How to break weight plateaus or lose my weight fastest and safest way?

Ans: During my weight loss journey, I was stuck at 85 kgs for long and was able to break that plateau by following the Keto Diet. If you are tough enough then Keto diet is worth a try.

For any queries, feel free to connect to me through social media!

**Mahip Singh Kakan**  
ECE, 8<sup>th</sup> Sem.



## The Indian Army



Indian Army - the organization with the motto "Service Before Self". The organization which teaches its employees to first think about the nation, then about teammates and at last about themselves. The most advanced technology firm in India also happens to be the country's best construction company and its biggest logistic operator. It is India's first cellular enterprise, finest hospital group and largest network of educational institutions. The organization which wants you to build bridges where there are no roads, safeguard sovereignty with the smallest spanner and the largest guns, gives you a 55 Crore tank to drive, makes you travel across all zones of the country and also has offices in all the countries of the world. The organization that takes care of you for life and educates you, has its men in the harshest and toughest of conditions, from the scorching deserts of Rajasthan, to the challenging terrains of Siachen, in the wild forests of North East and many more. It encourages you to try different sports with cutting edge sports facilities like Para-jumping, Shooting, Horse riding and has won Olympic and Commonwealth medals for our nation. It trains you in all the skills you need, teaches you the value of life, respect, honour and pride. The organization which wants you to be everything you want to be. It's one of the 10 largest employers in the world with over 1.2 million colleagues and more than 20 diverse career disciplines; it is India's most exciting work place and you can be a part of its glorious tradition and live a life less ordinary. The Indian army is the organization which is respected and admired all across the nation.

The Indian Army is the land-based branch and the

largest component of the Indian Armed Forces. The President of India is the Supreme Commander of the Indian Army, and it is commanded by the Chief of Army Staff (COAS), who is a four-star general. The Indian Army has a regimental system, but is operationally and geographically divided into seven commands, with the basic field formation being a division. The primary mission of the Indian Army is to ensure national security and national unity, defending the nation from external aggression and internal threats, and maintaining peace and security within its borders. It conducts humanitarian rescue operations during natural calamities. Major operations undertaken by the army include: Operation Vijay, Operation

Meghdoot and Operation Cactus. The army has also been an active participant in numerous United Nations peacekeeping missions including those in: Cyprus, Lebanon, Congo, Angola, Cambodia, Vietnam, Namibia, El Salvador, Liberia, Mozambique and Somalia.

You can join the Indian Army through permanent commission or short service commission. There are various ways to join at 10+2 level, graduate level and technical entry. Notifications to join at different entry levels are updated on the official website [www.joinindianarmy.nic.in](http://www.joinindianarmy.nic.in).

Life in the armed forces isn't like any other. When you're protecting your country's borders 16,000 feet above sea level at a temperature of -50 degrees at the Siachen Glacier, it can't be just another job. Neither is battling an average temperature of 50 degrees in the blistering heat of Rajasthan. You're not working for yourself. You are doing it for your country and for its citizens. You are ensuring that they go about their lives normally even though your life is anything but that. It's not easy to be so selfless and that is exactly what makes these ordinary men extraordinary. Army men know the level of expectations from them. And the only way to live up to those expectations is training and training hard. It's almost like being super humans. Those who are physically, mentally, emotionally and spiritually tough, manage to survive all odds. These are the ones who become a part of the Army.

Sanath Kumar Swain  
EEE, 2<sup>nd</sup> Sem.



**Prof. Gopal Sahu** of the Computer Science Department is an active member of the Bhubaneswar Cycling and Adventure Club and has been on arduous yet exciting cycling tours to Vietnam and Kathmandu among other places. This interview by Disha Kumari of CSE, 4<sup>th</sup> sem. lets us know more about his adventures.

**Disha** :Hello Sir! To begin with, we have come to know that you are an active member of a cycling club. Sir, if you could tell us about this club and how long have you have been a member?

**Gopal Sir** :Basically the club is called Bhubaneswar Cycling and Adventure Club, which started in 2013 by ten members who were professionals and entrepreneurs. In April 2016, my friend and I bought two cycles. From May 2016, we started using it actively. I searched in the internet if there was any existing Cycling Club in Bhubaneswar. I found that there was this one Club. This club conducts various kind of cycling activities to promote the cycling culture in Bhubaneswar. Apart from cycling, running and swimming are also conducted by this club.

**Disha** :You have cycled to many places such as Kathmandu. Sir, if you could highlight your experience and the outcomes of such cycling trips.

**Gopal Sir** :This cycling Club conducts international trips every year. In 2014, the club members started their journey from Manali to Leh. That was really very tough. If you consider cycling, you might be knowing that there is a point which is the highest motorable road in the world. So that is what they have covered in 2014. In 2015, a total of six people journeyed from Bhubaneswar to Bhutan. In 2016 we had taken a trip from Vietnam to Cambodia. These two are two different countries. We have traveled a lot through cycles. First we went to Vietnam and then we started cycling to Cambodia. So we had covered 2002 kilometers in 15 days, covering two countries.

We had not faced much problem as the roads were flat and the countries were cycling countries. Coming back, this Kathmandu trip was conducted in the month of October, 2017 where we had covered 1500 kilometers in 12 days. The Kathmandu trip had been a challenging trip as the roads had a lot of hilly terrain.

**Disha** :Have you ever experienced any challenging situation while on a cycle trip? How did you overcome these problems? Do you really think that these problems can help a person to grow both physically and mentally?

**Gopal Sir** :Yes, we have faced a lot of problems and we have overcome these problems. Normally when you travel in the car or a bike you will find that people do not recognize you much. But when you cycle you will first receive a lot of public support. People on the road will cheer for you and motivate you. So whatever hurdles we face seems less. Obviously while traveling we face problems such as puncture and breakdown of cycles. But we as a team are expert in repairing our cycles ourselves and we do not depend on anybody else. We carry our own repair kit. This time we faced a lot of problems. So it is just the mindset, if you want to do it, you can do it.

**Disha** :We are living in the age of technology and today's generation can hardly think of cycling when they have their own motor vehicles. You are a perfect example for us who lives a healthy life. How would you motivate your students to start with this healthy lifestyle?

**Gopal Sir** : Whenever I take my classes, I try to motivate my students to cycle. Day by day if you have noticed, the environmental pollution is increasing. Today everyone lives a luxurious life and they use their motorbikes frequently. Whereas in other countries I have noticed, that even five year old kids use bicycles to go to school. So it is about the culture. If you look at the benefits of cycling, firstly you become physically strong, secondly the environment pollution will decrease and lastly the traffic jam also decreases. Sometimes I come to college riding my bicycle and even drop my daughter to her school on it. If everyone tries to cycle, just imagine what good effect it will bring to the environment and also on individual health.

**Disha** : Thank you sir for sparing time for our SLATE.

**Gopal Sir** : You are welcome.



*Human experiences when recorded through a medium and registered through language become literature. These experiences are nothing but incidents that happen in our day-to-day life. They might be overlooked or go unnoticed, but when put down into black ink, create an enormous world of literature. These incidents might take place on distant lands, with different people and in diverse cultures, but they make a difference in the lives of all those who choose to know them. Their universal appeal and their ability to surpass time are what makes them unique. Our “recollections in tranquility,” recorded through language create literature.*



*partly because it is market driven. Publishers are looking for more exotic literature which didn't get published in the United States. It's good for writers who come from elsewhere because they reach a very large audience. For American literature, I think as a commodity not having so much of a literary value but for monetary value; this is a very good time that's partly because of the decision in the UK to include American works in their Man Booker Prize which is often considered as the most prestigious”.*

*As an academician he also shared his concerns about Indian education system as, “I think perhaps Indian educational system tends to focus students’ interest very narrowly - what I understand in terms of being able to read a limited number of texts, been tested on those particular texts and*

A man of eminence and a man of literature is Dr. Robert Morace (Bob), a Professor from Daemen College, in Amherst, New York. He and his wife were on a visit to Kolkata and thereafter to Silicon to meet his brother-in-law Dr. Jaideep Talukdar:

*“We come to visit family, Jaideep and friends. I've visited Kolkata, Bhubaneswar and Kerala and I love Indian food....I'm a vegetarian so I have not met an Indian vegetarian dish that I've not liked. I like them all but the Misti Doi is specially close not only to my heart but to my stomach as well”.*

He works on contemporary literature, particularly Scottish contemporary literature with a focus on fiction and by contemporary he means last 30- 45 years, especially recent literature from last few years.

Sighting the changes observed in Scottish literature he said, *“There have been significant changes because there have been enormous political changes both in United Kingdom in general and Scotland in particular and all of this has an impact on the literature which is being written, published and funded. I would say Scottish literature right now is particularly at an interesting time”.*

About his views on American literature Dr. Morace said, *“In the United States there is a great interest in rural literature*

*then there's the issue of how much literature from elsewhere is available for Indian readers and Indian students. That's perhaps changing; thanks to companies like Amazon for example. On the other hand in places like West Bengal and Odisha and also a few other places you have a real interest in culture and that perhaps distinguishes India from several other places including United States which perhaps is more commodity driven”.*

Talking about global readership and its implications he said, *“For implications, yes a global world, a global economy ensures everything is available all around the world. But at the same time I think there's been a small reaction to that and the reaction is that people become more interested in things that are local perhaps. One example of that is detective fiction coming from the Nordic countries are set in exotic locations, exotic for American, exotic for Indians, places that most of us aren't familiar with. It's so specifically set that people feel it's an alternative to be in the global economy where you're on the web all the time and being on web is not like being at one place”.*

It was wonderful talking to him. To know about an academican's concerns and understand his perspectives on literary manifestations had been an insightful learning experience.

*A Man of literature, drama and theatre, a film director and most importantly an artiste of repute and humility is Sri. Anant Mahapatra. He is associated with Silicon as an advisor to the Theatre Club, mentoring and grooming students, as and when required, for performing on stage. He has been an artiste and an actor himself. It was not just a profession for him but a passion that he closely followed. He had been associated with the Doordarshan and the All India Radio (AIR). He has directed several short films and been associated with several theatre groups. He founded the Utkal Rang Manch to uplift the state of Odisha's stage performances in theatre and drama. He has also been associated with several literary ventures and takes pride to call himself a young man of 83.*



In the Shakespearean view point all the world's a stage and all men and women mere players. But a portrayal of experiences and characters that are life-size is what calls for talent, skills and expertise, and most importantly an artist's vision. Art being an imitation of life, does not falsify life. But to be true to the spirit, art requires the appropriate medium of expression and representation. And the stage is one such medium where you recreate the saga of human life painted through imagination and presented through dramatic artistry.

In the sombre ambience of Sri. Anant Mahapatra's house, when we spent one evening chatting with him over a cup of coffee, we learnt not only about the man but about what it means to be up on a stage, with painted faces, trying to bring out the grandeur of human experiences.

*"When you grow up, when you are an adult you have the opportunity to choose a particular media..."*

Sri. Mahapatra says, *"Theatre is different from the films or television. Because in theatres you have to carry it (expressions and emotions) to the audience, where as here (in films and television) you have carry it to the audience*

*with the visual first and then the audio comes... So I introduce a complete silence in the beginning of the play or with a lot of noise so that the audience sort of looks as if something's going to happen. Those two characteristics are important in my plays."*

He was also exposed to the Hindi theatre during his intermediate days in Allahabad. He read a lot. He read plays in different languages such as Hindi, English, Odia and Bengali, and even a lot of foreign literature. He also participated in Radio plays.

In 1958 and 59 he regularly acted in theatres, he recounts, *"In 1964 I had formed a theatre group called 'Srujani'. Some people called it experimental theatre... In 1999 I formed Utkal Ranga Manch Trust which was to revive the Indian Theatre.... I had the opportunity, a great opportunity of working with the television right from the beginning (when TV came to Odisha in the 1970s)... Many of my plays were telecast by the Doordarshan. They shot it directly from the stage".*

Characters are integral to a play. They vehicle the ideas a dramatist wants to display on stage about which Sri Mahapatra says, *"When you are doing a play... you get into the character... When I do a play it normally takes me six months. I read the script 20 times; 30 times ... An actor finds it very difficult to understand what to do with his hands (on stage)... I tell them you think of that character what he is supposed to be doing".*

About plot construction he says, *"We can't take liberty with original theme or plot ... Liberties can be taken to the extent that you do not distort the original plot".*

He holds the view that we hardly do any original plays by the playwrights of our land. It is the role and responsibility of the people and the government as well to promote the classics of our land. *"We in India... unfortunately talk about culture, we do not understand what culture is. Culture does not mean signing and dancing alone. Culture means those inherent qualities of a big society, of the soil !"*

He feels concerned about how things are and looks forward to a redefining of our understanding of culture for a better change.



## ICIT-2017

The 16<sup>th</sup> edition of ICIT was organized from 21<sup>st</sup> to 23<sup>rd</sup> of December 2017. Prof. Sunil Kumar Sarangi graced the occasion as the Chief Guest for the Inaugural function on 21<sup>st</sup> December. The program was inaugurated with the chanting of Ganesh Bandana by the students of Silicon



and lighting of the lamp was done by the invited dignitaries. The welcome address was delivered by the Principal Prof. Jaideep Talukdar, followed by deliberations of the General Chair, ICIT-2017 Prof. Vincent Oria, Chief Guest Prof. Sunil Kumar Sarangi, Program Chair, ICIT-2017 Prof. B. S. Panda and Vice President of OITS Prof. Ajit Das. The vote of thanks was offered by the Director-in-charge Prof. Saroj Kanta Misra.

The three-day program consisted of 6 Keynote Talks and 2 Industry Talks along with 49 research paper presentations. The keynote speakers were Sri Parameswaran from University of New South Wales Australia, Mr. Bhaskar Raman from IIT Bombay, Prof. Saraju P. Mohanty from University of North Texas, Denton, USA, Prof. Vanati Gopalkrishnan from University of Pittsburgh, Pennsylvania, USA, Prof. Niloy Ganguly from IIT Kharagpur and Prof. Vincent Oria from New Jersey Institute of Technology, USA. Prof Parthiban Srinivasan, CEO Vigyani India delivered an invited talk on "Deep Learning for Biomedical Research". There was an Industrial talk on "Data Science Use Cases in Industry and Demonstration of Rapidminer," by Mr. Ralf Klinkenberg and Mr. Kamal Pradhan. There were 10 sessions in the conference on different tracks of relevance, where the 49 selected papers were presented.

The poster presentation of Students Research symposium was held on 22<sup>nd</sup> December parallel to the conference where 17 posters were demonstrated. On the second day, there was a cultural event, wherein the residents of Adruta

Children's Home performed Odissi and other folk dances. They completely enthralled the audience with their mesmerizing performances. On 23<sup>rd</sup> of November, the Narayan Mishra Award for best paper from Odisha for ICIT 2017, a cash prize of Rs. 4000 was awarded to the authors



Prasenjit Maiti, Jaya Shukla, Bibhudatta Sahoo and Ashok Kumar Turuk from NIT, Rourkela. The prestigious Amiya Kumar Pujari Best Paper Award ICIT 2017, a cash prize of Rs. 5000 was awarded to the authors Susmita Sen, Syed Naser Daimi, Katsumi Watanabe, Joydeep Bhattacharya and Goutam Saha from IIT Kharagpur. The poster presentation awards were conferred on different tracks. The Best Paper Award in Internet Technology and Application Track was awarded to Abhisek Ray, Nivedita Mahapatra, Soumya S. Das and Annapurna Mishra of Silicon Institute of Technology, Bhubaneswar. The Best Paper Award on Community Network and Protocol Track was awarded to Sasmita Tripathy, Animesh Behera, Shibashankar Naik and Rasmi Ranjan Bhoi of Vikash Institute of Technology, Baragarh, Orissa.



### Scilab Lecture Demonstration

Scilab is a free and open source alternative to Matlab. A Lecture & Demonstration session on Scilab was organized by the FOSSEE (Free and Open Source Software in Education) team of IIT, Bombay at our college on 12<sup>th</sup> October 2017. The program was conducted remotely through Video Conference where 22 faculty members from our college, 4 from other institutes like TACT and SOA University Bhubaneswar attended the program. During this demonstration, how to avail Scilab free of cost and how to use it for solving problems from more than 550 standard textbooks of science and engineering was explained.

### Course on Creative Writing

## Creative Writing

12<sup>th</sup> October 2017

**Cdr. Surendra Nath Mohanty**

Organized by

Silicon Institute of Technology & Cha C-Tea



A course on Creative Writing started on 12<sup>th</sup> October 2017 with 59 students from the 1<sup>st</sup> year. This course was rolled out for 20 classes with 2 hours per week. Cdr. Surendra Nath Mohanty was the resource person for the course. It was a joint venture of Silicon and Cha C-Tea.

### Induction Program of Scholars' Club

The Induction Program for the Scholars Club was



organized on 14<sup>th</sup> October 2017. This year, in addition to the 48 students with 9 CGPA and above, 38 students have been nominated to the club by the respective departments based on the scholastic activities of the students. The members were motivated by Prof. Jaidep Talukdar, Prof. Sudarsan Padhy, Prof. Saroj Kanta Misra and Prof. Debabrata Kar to target concepts and to innovate.

### Workshop for Girls on Self Defense

A group from IIT, Bombay, named "Nirvaya", conducted a workshop for girl students on Self Defense. The workshop was conducted on 14<sup>th</sup> October 2017 inside our campus and 15 students from Silicon attended the program. Physical techniques of self-defense as well as tips to avoid and handle different situations were explained and demonstrated to the participants by the resource persons from IIT, Bombay.

### Rhythmnova



The Silicon Music Club celebrated its annual event "Rhythmnova 2K17" on 14<sup>th</sup> of October 2017 which gives a platform to the enthusiastic performers to showcase their talent in the musical evening. The evening was





started with lighting of lamp. Principal Dr. Jaideep Talukdar addressed the gathering of the evening. Silicon Music Club acknowledged the Consonance winners and Core Team Members of the Club followed by dance and song performance. All power packed performances made the audience dance with the beats.



At the end the SMC Band and Demon dx group performance thrilled the crowd. The core team of Music Club along with Silicon Student Council, Silicon Creative Team, CCC worked together under the supervision of Prof. Samaleswari Prasad Nayak, FC Music Club and Prof. Subhakanta Dash, FIC Sports and Culture to make the evening a grand success.

### Hackathon 2018

The Smart India Hackathon 2018 was inaugurated on 16<sup>th</sup> October 2017 by the Honorable Minister of HRD Sri. Prakash Javadekar. A large number of students from Silicon watched the program in our Video Conference Hall. This year there were two categories, one is Software Design with a final round of 36 hours of coding and execution and the other one was Hardware Design with a final round of 5 days of Design, Fabrication and Execution. Prof. Tarini Ch. Mishra and Prof. Ambarish Mohapatra interacted with students and shared the last year experience. Silicon has four teams this year that have made it to the nationals.

### Siliconite wins Bronze Medal in All India Student Design Competition

Mr. Anish Kumar Sarangi, a student from 5<sup>th</sup> Semester EEE, has won Bronze Medal in the 48<sup>th</sup> All India Student Design Competition 2017 in Electronics & Telecommunication Discipline. The competition was conducted by National Design Research Forum of Institute of Engineers (India). The award was delivered on 29<sup>th</sup> October 2017 at a function at Panaji, Goa.



### Silicon App

The Silicon App was launched on 8<sup>th</sup> November for ERP functionality beyond the desk to mobile devices where ERP of Silicon can be accessed via smart phones. Those who are using android smart phones can find it on Google Play Store by searching Silicon Bhubaneswar. Anyone can get instant access to some essential work center, including Class Attendance, Notification, Leave and Personal Attendance.

### Free Eye Testing Camp



An Eye Testing camp was organized by the Staff Welfare Committee on 4<sup>th</sup> November 2017. The camp was conducted by a team from "GKB Opticals" and was coordinated by "Exide Life". 97 staff members got their eyes tested during the program.

### Alumni Talk on Higher Studies Opportunities Abroad

An Alumni Talk was organized by the Department of CSE, IT and MCA on 4<sup>th</sup> November 2017 at Lecture Theater of our college. Mr. Preetam Ojha, an alumnus of our college from the department of Computer



Science & Engineering of the batch 2008 working at FACEBOOK, USA, delivered a talk on "Higher Studies Opportunities Abroad".

### Stress Relief Session

Stress is a major obstacle to academic achievement and the stress relief power of Yoga has been shown to boost students' performance. Silicon's Yoga Guru Prof. Prasant Mallik delivered a talk on "Stress Relief" in the monthly Quality Circle Meeting on 28<sup>th</sup> October 2017 where he explained about the benefits of Asanas, Meditation, Mudras and Yogapedia.

### Lecture Series on "Deep Learning and its Applications"

To boost up the research in the field of Deep Learning and its applications, a series of Lecturers started from 11<sup>th</sup> November 2017 by Prof. Sudarsan Padhy, a senior professor in the department of CSE. The objective of these lectures is to boost the faculty members pursuing their research in any field where deep learning can be applied. It includes implementation of Convolution Neural Network (CNN), Recurrent Neural Network (RNN), Autoencoder and Deep Belief Network in Python.

### Awareness Program on Liver Disease

Dr. Ashok Choudhry, the famous Hepatologist from Indian Liver Patient Foundation (ILPF), Delhi delivered a talk on Liver Disease on 13<sup>th</sup> November in the Video Conference Hall. Many students and staff members attended the talk.

### Workshop on Finite Element Method for Electrical Engineers

A workshop on Finite Element Method for Electrical Engineers was organized by the Department of EEE. It consists of 12 hours of lectures mostly by Prof. Sudarsan Padhy, started on 6<sup>th</sup> November and completed on 21<sup>st</sup>

November 2017. It covered topics on finite element method, one dimensional differential equations, Application to one dimensional electrical problems, two dimensional electrical problems and Advanced finite element method.

### First prize in XPRESSIONS 2017



Two of our 1<sup>st</sup> semester students Mr. Swaraj Kumar Mohapatra and Mr. Amit Kumar Pradhan from Computer Science & Engineering branch won the 1<sup>st</sup> Prize of Rs. 25,000 in the event Helios, a Business Simulation Game. The event was held in XPRESSIONS 2017 at XIM Bhubaneswar during 10<sup>th</sup> to 12<sup>th</sup> November 2017.

### Silicon Quality Assurance Forum (SQAF)

With the objective of productivity of employees and satisfaction at work place Silicon has framed a Silicon Quality Assurance Forum (SQAF). Dr. Pradyumna Kumar Tripathy, Sr. Assistant Professor, from the department of CSE is the convener of the team. Other faculty members of the team include Dr. Sushri Samita Rout, Mr. Sanjit Kumar Swain and Mr. Bipin Bihari Tripathy. The forum encourages every individual at Silicon to put forth their suggestions, concerns, issues to the forum for improvement in the quality of work-life at Silicon.

### Mental Health Issues Awareness

Dr. Suwendu Narayan Mishra, Associate Prof. IMS & SUM Hospital, Bhubaneswar delivered a talk to raise Awareness and understanding of the various Mental Health Issues on 13<sup>th</sup> November 2017. Many staff members and students attended the talk.

### Staff Cricket Tournament

The Staff Welfare Committee organized a Cricket Tournament from 14<sup>th</sup> November to 30<sup>th</sup> November. There were 5 teams named as Kathajodi, Brahamani,





Kharashrota, Mahanadi and Kusabhadra with the name of holy rivers in Odisha. The final match was between Kharashrota and Kusabhadra Team on 1<sup>st</sup> December. The Winning Team was Kusabhadra Team with Captainship by Kamal Kumar Sahoo.

### Staff Sports Day



The Institute organized its Annual Staff Sports on 2<sup>nd</sup> December 2017 in the field inside the college premises. The events were 100m race, sack race, lemon race, needle and thread race, shot put, musical chair and



tug of war for men and women. All the events were coordinated by the members of the Staff Welfare Committee in a fair manner. The winner and runners up prizes of the Sports Day were given on Staff Award Day.

### Workshop on Image & Video Processing



A two-day National Workshop on Image & Video Processing (NWIVP-2017) on 15<sup>th</sup> & 16<sup>th</sup> December 2017 was organized by the Department of Electronics & Communication Engineering. The inaugural talk was delivered by Prof. (Dr.) Priyadarshi Kanungo from C V Raman College of Engineering on Image Segmentation and its Applications. Prof. (Dr.) Pradipta Kumar Nanda from SOA University gave a talk on Moving Object Detection. Mr. Aditya Acharya our internal resource persons explained about the Basics of Image Processing and Mr. Nihar Ranjan Panda conducted the Hands on training session using MATLAB. 65 students from Silicon participated in the workshop. The convener of the program was Prof. N. R. Panda and the coordinators of the program were Prof. Annapurna Mishra and Prof. Aditya Acharya.

### Workshop on Scope of Entrepreneurship in Electrical and Electronics Engineering



The Department of EEE in association with the Entrepreneurship Development Cell organized a workshop on Scope of Entrepreneurship in Electrical and Electronics Engineering on 16<sup>th</sup> December 2017. The program was designed to strengthen the knowledge on entrepreneurship, basic concepts and practical approach to set up their own enterprise in Electrical & Electronics sector. The inaugural address was delivered by the Chief Guest Er. Sashibhusan Upadhyay, Director, Jindal Stainless Ltd., Bhubaneswar & Guest of Honor Mr. Rajen Padhy, DG, UCCI, Bhubaneswar. Er. Manoranjan Mohapatra, Founder & Managing Director, Suyog Telemetric, delivered on Scope of entrepreneurship in Telecommunication sector. Er. Lambodar Moharana, Director, LISA Plastic, spoke on the Scope of Entrepreneurship in the Manufacturing sector. Er. Bibhu Charan Swain from Powertech Consultants, spoke on the Development of start-up and entrepreneurship in the field of power and energy sector. Ninety-five students from Silicon and other Institutes participated in the workshop which was convened by Prof. Sisir Kumar Balita and coordinated by Prof. (Dr.) M. P. Agasty.

#### MSME Funding for Innovative Project Ideas

The 24<sup>th</sup> Selection Committee Meeting under the Scheme Support for Entrepreneurial and Managerial Development of SMEs through Incubators was held under the Chairmanship of Additional Secretary and Development (MSME) at New Delhi, on 13<sup>th</sup> & 14<sup>th</sup> December, 2017. Dr. Mahendra Prasad Agasty attended the meeting on behalf of Silicon Incubation Centre. Five business ideas from Silicon Incubation were presented before the selection committee for MSME funding. Four proposals got selected for funding submitted by Debashis Kar, Sibasisha Mishra, Sibasish Mishra and Chandrasekhar Rout. Each proposal will get a funding of Rs 6.25 lakh for their product development.

#### Achievement by Silicon Students in CodeCamp 2017

Infosys, Bhubaneswar organized CodeCamp 2017 and there were 31 teams consisting of 3<sup>rd</sup> year students from different participating engineering colleges of Odisha including NIT, IIIT, SIT and KIIT. Three teams from Silicon participated in the program. The team comprising of Mr. Padmalochan Panda from 6<sup>th</sup> Semester Computer Science & Engineering and Ms. Aastha Gunjan from 6<sup>th</sup> Semester Information Technology bagged the 1<sup>st</sup> prize while the team comprising Mr. Priyatosh Sahu and Ms. Suman Udgata

from 6<sup>th</sup> Semester Computer Science & Engineering bagged the 3<sup>rd</sup> prize. The 2<sup>nd</sup> prize went to VSSUT and the third prize was shared with ITER.

#### Alumni Meet



The Silicon Alumni Association organized its 9<sup>th</sup> reunion on 29<sup>th</sup> December 2017 where 236 alumni from different years visited the campus and attended the event. The lamp was lit by Principal Dr. Jaideep Talukdar, Director-in-Charge Dr. Saroj Kanta Misra, Dean Academics Dr. Debabrata Kar, first batch alumni S. Srinivas Rao and Alumni Association Secretary Samaleswari Prasad Nayak. All alumni enjoyed a lot with live band, bonfire, games and dance. The Selfie Zones was eye-catching for all alumni. The event was organized by Prof. Priyabrata Nayak, Prof. Samaleswari Prasad Nayak, Prof. Suchismita Rout, Prof. Rupa Kanungo and Mr. Arun Baral along with the Student Council Team.



#### Health Talk on Cardiac Related Issues & Nutrition for Disease Prevention

A health talk was organized by the Staff Welfare Committee on 30<sup>th</sup> December 2017 where Dr. Tanmay Kumar Das, Senior Cardiologist, CARE Hospitals, Bhubaneswar spoke about Cardiac Related Issues and





Mr. Guru Prasad Das, Senior Dietitian, CARE Hospitals, Bhubaneswar told on Nutrition for disease prevention. The talk was very helpful for all faculty members.

### Year End Celebration

The institute organized events like singing, recitation, poetry/shayari, jokes and other events for staffs at the end working hours of the year at Seminar Hall in its monthly event Quality Circle. Many staff members showcased their hidden talent and grabbed the gifts. Director-in-charge, Dr. Saroj Kanta Misra delivered the year end address. The events were coordinated by Prof.

Bhagyalaxmi Jena with the committee members of Quality Circle.

### Results of National level Wipro Data Privacy Contest

Wipro had conducted a national level contest named "Wipro Data Privacy Contest" for the Wipro selects from the 2018 graduating batch. Sudeep Maharana (Registration No. 1401209214) from EEE, Silicon was one among the ten winners declared by Wipro.



### News from Industry Interface Cell

#### Shared Day 1 Campus Recruitment by WIPRO & Infosys Technologies

Like the previous years, the on-campus placement at Silicon started with the Exclusive Shared Day One On-campus drive at Bhubaneswar Campus. Premiere IT companies like WIPRO and Infosys visited Silicon as Shared Day One Partners.



Infosys visited on 6<sup>th</sup> and 7<sup>th</sup> October 2017 as a Shared



Day 1 partner. Eligible students from the batch 2014-2018 at Silicon Hills and Silicon West participated in the Infosys Shared on-campus drive. We had finally 88 winners from Silicon Hills while one winner from Silicon West campus.

#### ADP Pooled Campus Drive

Automated Data Processing (ADP) conducted a pooled campus drive at Silicon on 12<sup>th</sup> and 13<sup>th</sup> October 2017 for eight participating colleges which included three

Govt. engineering colleges - CET, Bhubaneswar; IGIT, Sarang and Govt. College of Engineering, Kalahandi. Out of 600 plus participating eligible students, ten students were selected. Silicon had the second highest hit-ratio with three winners.

#### Soctronics Off-Campus Drive

Soctronics, a customer focused VLSI design Services Company offering turnkey solutions in Logic design, Physical design, Analog Mixed Signal design, Circuit Layout, Embedded System Design and System Engineering, conducted a pooled campus recruitment drive on 28th and 29th October 2017 at Silicon for five participating colleges. Out of thirty-two eligible from Silicon, we had four winners.

#### STL On-Campus Drive

Silicon Tech Lab (STL) conducted an on-campus drive for twenty seven MCA students at Silicon on 14th and 15th November 2017. Out of twelve shortlisted from the on-line test conducted, five were selected.

#### BI Pros

Business Intelligence Professionals (BI Pros) conducted a pooled campus drive for the MCA students where our twenty-two MCA students appeared for the written test on 18th November 2017. Nine were shortlisted from the written test for Final Interviews and two were selected.

In a separate pooled campus drive conducted for the first time by BI Pros for the B.Tech students, thirty seven shortlisted candidates from our college appeared for the written test on 12th December 2017 with shortlisted students from CET, Bhubaneswar, IGIT, Sarang and DRIEMS, Dhenkanal. Out of eighteen shortlisted candidates for final interviews, five were selected. Silicon had the highest hit-ratio.

#### Mindtree On-campus Recruitment Drive

Mindtree Limited organized a campus recruitment drive for eligible 2018 passing out students from B.Tech. and

MCA for four colleges/Deemed University - Silicon, NIST, Berhampur, CET, Bhubaneswar and KIIT Deemed University - between 23rd November 2017 to 29th November 2017.

The on-line tests were conducted in the respective participating colleges and the final interview for all shortlisted students was held at KIIT on 29th November 2017.

Out of 154 eligible Silicon students who appeared for the on-line test at Silicon on 23rd November 2017. twenty-five candidates were shortlisted for the interviews and sixteen were selected. Silicon had the highest hit-ratio.

#### Nettantra Technologies On-campus Recruitment Drive

Nettantra Technologies, one of the offshore Cloud, Mobile and Web development companies with its India Development Centre at Bhubaneswar, conducted an exclusive on-campus drive for the eligible B.Tech. students from Silicon on 25th and 27th November 2017. Out of fifty-five eligible candidates who went through the selection process comprising of Aptitude test, technical-coding test and interviews, two Siliconites were declared as winners.

#### CASIS

Centre Of Advanced Software Technology & Solutions (CASIS) conducted an exclusive drive for the eligible MCA students from Silicon on 8th December 2017. Out of twenty-one candidates who appeared for the process, three were selected.

#### JBS Capacitor

J B S Capacitors Private Limited involved in Manufacturing Machinery & Equipments and projects related to IT, selected two students of MCA to work on their new project (machine learning based for a fintech product) in collaboration with a UK based firm.

### Corrigendum

*This is with reference to the Profile of an Organization titled "Amul: the Taste of India" published in the Jul.-Sept. 2017 issue of SLATE. The feature mistakenly mentioned Jigyansa Das as the writer of the article whereas it had been written and contributed by **Mr. Abhilash Satpathy of CSE, 6<sup>th</sup> Sem.***

*The mistake is regretted by the editorial team.*





### Vincent Oria

*He received a diplome from the Institute of National Polytechnique (formerly INSET) in Yamoussoukro, Ivory Coast, in 1989 and a Ph.D. in Computer Science from the Ecole Nationale Supérieure des Telecommunications (Telecom-Paritech), Paris, France, in 1994. His research interests include Multimedia Databases, Spatio-Temporal Databases and Recommender Systems.*

*Computing was my starting. I studied electronics, computer science and business. I got admitted into computer science. I was in data base. I did my work on image data base. This is*

*how I got into Big Data. I like young students and now undergraduates and are interested to go into this field, I have a small piece of advice for them. First of all they need to understand that the problems that may be solved by our own have already been solved and the ones which are left are the difficult ones so the students need to collaborate with people. It is more of a social activity. It is the revolution that is beginning so every other field is becoming application of computing. There are more opportunities for students and in the coming years there will be ample job opportunities. I would also like to tell the students that they should try to do the best they can. They can try to do more to succeed but they need to push themselves to the limit and most importantly they must maintain a good balance between professional and personal life.*



### Vanathi Gopalakrishnan

*She is currently a tenured Associate Professor in the Department of Biomedical Informatics, in UPitt's School of Medicine, with secondary appointments in the Intelligent Systems Program and the department of computational and Systems Biology. She has contributed to projects funded by the National Science Foundation (NSF) and the Department of Defense (DoD).*

*When I was at the age of sixteen, my mother bought me a computer from Singapore and the first programme which I wrote was on matrix multiplication and since then I have been*

*inclined towards computers. But when I went to pursue my Master's Degree, I started thinking about how to apply Computer Science into something which is going to last for the rest of my life. Since then I got inclined towards Biology and started learning the subject, spent hours in lab doing experiments, completed all home work. So basically I am a self taught student...*

*Getting nostalgic and speaking about her past she shares, "Today, who I am is because of India. When I go to my office, people say I am grounded and this groundedness comes from India. India's spirituality, peacefulness, simple living and high thinking is what makes you grounded. Success is a step by step process. You should be happy with small victories. If you fail initially, never fear failure. Just keep moving forward pushing behind your fear".*

*As an advice for students she says, "Follow your passion because passion gives you motivation. In spite of facing difficulties, cross all the obstacles. If people criticize you, keep continuing to do your job. Never let the fear of failure put you down".*

*As for the teachers she shares her ideas of teaching saying that, "Teachers should be motivated to learn different styles of teaching. A good mentor believes in the student, understands the value of student and supports the students in all possible way to reach their goals... Student mentor relationship should be such that student should feel free to ask good questions and should be trained in such a way that they develop their problem solving ability".*



### **Bhaskaran Raman**

*He is a faculty member at the CSE department in the Indian Institute of Technology, Bombay. His research interests and expertise are in communication networks, wireless/mobile networks, and technology for education. His current focus and specific interests are mobile crowdsensing, WiFi performance diagnosis, and use of technology in large classrooms for effective teaching.*

*My area is WIRELESS NETWORKS. This also links with wireless networks of SIEMS. We face a lot of issues to make Wi-Fi work on large scale. Initially we faced trouble in making*

*it work between 30-40 students. But now we have reached the point where we can configure it for 100-200 students at a time.*

*Bodhi tree is an interactive book posting platform. It has some similarities with other book posting platforms but here the perspective it is the tool used by teachers and it especially supports flipped classrooms. Flipped Classroom is an active learning methodology where students need to do some prior preparation like watching lecture material before coming to classroom. And in the classroom, we are supposed to do problem solving and discussion which is a higher level of learning than lecturing. Lecturing is actually passive method of learning which is not very productive. And in this active learning, Learning happens by trying, the way a child walks by falling. So actual learning happens in the contact hours and passive learning happens beforehand.*

*And this SAFE platform grew as a need from Bodhi tree as most of the time students come to class without really preparing because they are used to this lecture model. They come in expecting to be fed something so we wanted a mechanism where we conducted short quizzes in every class which was not possible by traditional means of pen paper, so every student is equipped with a smart device in the classroom. Usually a smart device is distraction in classroom but we have used it as a tool, we have to keep control how the device is used. So, the safe app gives control to the teacher; teacher keeps an eye on who is using safe app or who is not, at a point of time and in this way our exams get conducted without worrying about students copying or cheating. And immediate feedback is given to them through the app.*



### **Niloy Ganguly:**

*Dr. Niloy Ganguly is a professor in the Department of Computer Science and Engineering at the Indian Institute of Technology Kharagpur. He has been a post-doctoral fellow in Technical University of Dresden, Germany where has worked in the EU-funded project Biology-Inspired Techniques for Self-Organization in Dynamic Networks (BISON). He presently focuses on different aspects of Online Social Networks (OSN), urban and mobile computing.*

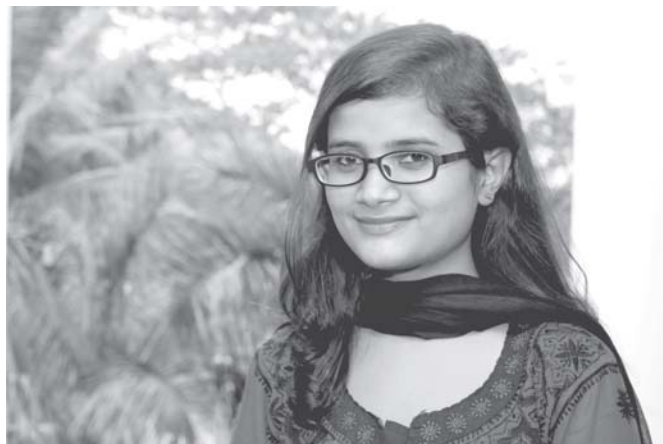
*What I have found in engineering colleges and among engineers is that students lack in learning. Students are more*

*interested in placements. A college is judged by its placement; the true learning process is missing. I would say, be inquisitive, be curious and try to learn.*

*The basic thing is that any institute would become great if there are more graduate programs. Till now we are lacking on graduate programs. Although under graduates programs are good in India, but we need to focus on research.*

*We have a project information technology and research association (ITRA). It is a project on post disaster management. That project has six institutes including IIT Kharagpur, IIM Kolkata, and NIT Durgapur.*





**Awantika Sharma** (2014-18) has scored 92.61 percentile in CAT-2017. She is from Computer Science & Engineering branch. She was interviewed by Akampan Gupta of ECE, 6th semester about her achievement.

**Akampan** : Hello ma'am, first of all congratulations for getting 92 percentile in CAT 2017. What was your initial reaction when the results came?

**Awantika** : Thank you very much! Well I was obviously happy when I saw my result. But, at the same time I also realized that I need to put in a lot more effort to improve my score.

**Akampan** : Can you tell us about your preparation strategy for CAT examination and what were the things that kept you motivated all through this venture?

**Awantika** : The most important thing that I did during my preparation was that I rarely missed any class of my CAT coaching at IMS and if at all I did miss a class, I would go for a backup class immediately. I also used to revise everything that was taught in the class every day.

**Akampan** : What is the thing that you will miss the most about our college?

**Awantika** : I'll miss my friends, classmates and also my juniors and seniors. I'll also miss the hostel life which has helped me grow as a person.

**Akampan** : What are your future plans?

**Awantika** : I don't plan to join an MBA college this year. I want to work hard and try and improve my score in CAT 2018.

**Akampan** : How important is it to follow a daily schedule for goal accomplishment in your opinion?

**Awantika** : It's very important to maintain a daily schedule if you are preparing for any entrance exam because you need a lot of practice for such exams. You should never procrastinate if you are seriously preparing for any kind of an entrance exam. It's not possible to mug up everything just before the exam and score well.

**Akampan** : Tell us something about your family and the values it has instilled in you?

**Awantika** : I am from a nuclear family. My father is a plus 2 physics professor and my mother is a homemaker. I also have an elder brother. I have seen the dedication my father has for his job and I try to show the same dedication in everything I do. I am really close to my mother. She has always motivated me to be honest and take a stand for myself. She has always encouraged me to have an independent opinion on everything. She has moulded me into the kind of person I am today.

**Akampan** : Who is your greatest inspiration in life?

**Awantika** : My family is the biggest inspiration in my life. My father inspires me to be honest to my work. My mother inspires me to speak my mind no matter what. My brother motivates me to work hard and fulfill my dreams.

**Akampan** : How do you spend your leisure?

**Awantika** : In my leisure time I like reading books and singing.

**Akampan** : Ma'am what messages will you give to your juniors?

**Awantika** : Decide on your goal and start working on it at an early stage. Do not shy away from working hard because at the end, hard work always pays off.

**Akampan** : Thank you ma'am. Best wishes for your future.

**Their Reason for Joy  
( A POEM OF SATIRE )**

" I will tell you about a day,  
When I was pregnant,  
and everyone's happiness knew no way.  
'Labour pain' someone said, and I was rushed somewhere,  
Looked like a hospital, also like did people care.  
I don't recall how I lost my senses,  
My eyes opened, and sad faces hung in the room.  
I wanted them to speak something, break all silent fences,  
Had I done a mistake, any later or soon?

'Is my baby safe?' was all I cried aloud,  
'Safe, but a girl!' was all their grudge about.  
All deserted the room,  
while tears quickly embraced my cheeks,  
Cried aloud with my baby,  
who'd been my company since months and weeks.

I heard her first cry, and she must have felt mine,  
Moved her hands on my hands,  
and I felt like bread does to wine.  
I could hear some voices from outside,  
'How I wish it had been a boy...'  
'Would run our family-tree, and a reason for our joy.'

Reluctant smiles welcomed us back home,  
Seated amongst a crowd, knowing we were all alone.  
Somewhere sensed a belief  
'maybe the drama is now done'  
Meanwhile my conscience whispered to me  
'Not now my dear, the war has just begun.'

So, we fought the war for years six,  
Amidst all those curses, and their weapons of ignorance,  
With our tools of self respect, yet hoping for a fix,  
Maybe our war knows,  
why to their hearts couldn't we make a difference.

But as we say that time is the key,  
And the seventh year changed it all, now I see..

Their hearts seemed changed,  
different and could find a reason for 'joy'  
Just because this time their baby machine had produced a boy.  
So what was the wait for now, got me kicked out,  
Along with my daughter, no matter how much did we cry,  
plead or shout.  
They had everything now, that means your younger brother,  
OH! what about one place in the family? Got him another mother!

Part two of our war has just started on the street,  
Had to give you a life, begged for work, worked as a maid in clumsy ways,  
Couldn't let go off your studies, seeing your progress was my daily treat,  
Couldn't let my lack of education dusk your days.

You kept growing, I kept weeping thinking of things that went missing these years,  
Your brother has new mother, but doesn't know of you, is what brought more tears.  
But I had to win this war and prove to some people  
That a child's sex couldn't destroy her life on terms unequal.

As report cards said, excellent in academics, inclinations towards sports were you,  
You're a teacher now, preaching knowledge, humanity religion and no other.  
Well I'm your mother and had been noticing something old, yet new,  
Your twenty sixth birthday, and maybe your pains made you an author.

Words by the society, none affected her books, nor did the stabs given by a few  
'NOBLE PRIZE FOR LITERATURE' said the newspapers one day, but the pain behind her words maybe no one knew,  
You were making the world proud and gave them happiness regardless of not being a boy,  
I hope at least now some people got 'a reason' for their 'joy'!

I guess we fought good together,



May you and everyone stay blessed forever.  
One thing I'm gonna wish for always, is that..  
Nothing but, my two children unite by love, and to part never.

I'll end my letter now, as my medicines are to be found,  
This letter will convey to my grandchildren, tell them about  
the war we fought, with no one around.  
Make them strong, make them wise, and tell them gender  
is no fame  
I'll ask you for one loving wish, if one of them is a girl, give  
her my name.

**Disha Kumari**  
*CSE, 4<sup>th</sup> Sem.*



**Akampan Gupta**  
*ECE, 6<sup>th</sup> Sem.*

### The Last Dismay

I thank Thee Lord for everything you gave  
My parents there ever to have  
Thou gave me a life so wonderful indeed  
That I repeat it like a religion and creed  
But is there happiness all around?  
But is there happiness all around?  
Do all people thank Thee on the same ground?  
Nay, I fear to say that it doesn't  
Because many of them live life as imprisoned.  
Thrown like heaps of rubbish  
Many of them orphans, yet more impoverished.  
Beggars, sweepers and workers are they

Is this their life's LAST DISMAY?  
Reduced to skeletons malnourished they are  
No one to love and none to take care  
Sleeping near bins and lurking by roads.  
Poverty and illiteracy added to their load.  
No demand to fulfill, as they have none,  
No study to beckon, though they need  
But we still think, we are worried.  
No homes to live, no god for them.  
Neither coffee parlors, nor shops of precious gems  
No reason to live, its better to die  
Still we worry and start to cry  
O mankind! We can make a difference,  
Let's try and abolish their sufferance  
Let's contribute a penny to change their fate.  
Which God ever refused and closed His gate.

**Satya Priyam Padhi**  
*ECE, 2<sup>nd</sup> Sem.*

### India in World Economic Forum

Amidst freezing and heavy snowfall, Davos-a Swiss Alpine town witnessed the gathering of global elites in the WORLD ECONOMIC FORUM (WEF). The 2018 edition of WEF convened under the theme "Creating a Shared Future in a Fractured World".

This annual convention took place from 23<sup>rd</sup>-26<sup>th</sup> January. After two decades, Narendra Modi became the first Indian Prime Minister to attend this forum which was last attended in 1997 by the then PM, Deve Gowda. Addressing the plenary session of WEF, Modi pitched India as an investment destination and a major driver of global economic growth. In his enthusiastic speech, the PM talked about how Indian ethos can be a global role model in today's conflicting times. He pledged to make India a USD 5 trillion economy by 2025, following which Indians would be job-givers rather than being job-seekers. He outlined climate change, terrorism and backlash against globalization as the three most significant challenges to civilization. According to him, the world is moving from needs based to greed based consumption, which raises a question of exploiting nature for our greed is our progression or regression? He also brought to light how globalization is losing its lusture. The PM called for a change and reform in global investment for more inclusion of India and spoke about how the country is cutting the "red-tape" and rolling out the "red-carpet" for international trade and investment.

The 2018 Davos meet saw the largest ever participation by an Indian delegation with 130 CEOs and several head of state and governments. Among all the economies, India is in the bright spot and got a good highlight at the congregation. The projected growth rate is likely to be 7.3% in 2018 and 7.5% in 2019-20. There is utmost probability of a positive effect on the outlook that many international agencies have about India.

Last yet important, Shahrukh Khan was honoured at the world economic forum's Crystal Awards for his 'leadership in championing children's and women's rights in India'.

**Aditi Chaudhury**

*ECE, 6<sup>th</sup> Sem.*

### **I had been to heaven once - Sikkim**

"Travel makes you modest; you see what a tiny place you occupy in the world"

North East India has always been a less accessible region of our country. It is basically due to its geographical locale. But on a positive note these regions have been less exploited and hence preserve the flora and fauna till date. They serve as one among the best tourist spots in India.

We visited Sikkim during the middle of May. We wanted to see snow fall but unfortunately we were struck with rainfall in Gangtok but still could find snow in Changu Lake. Our

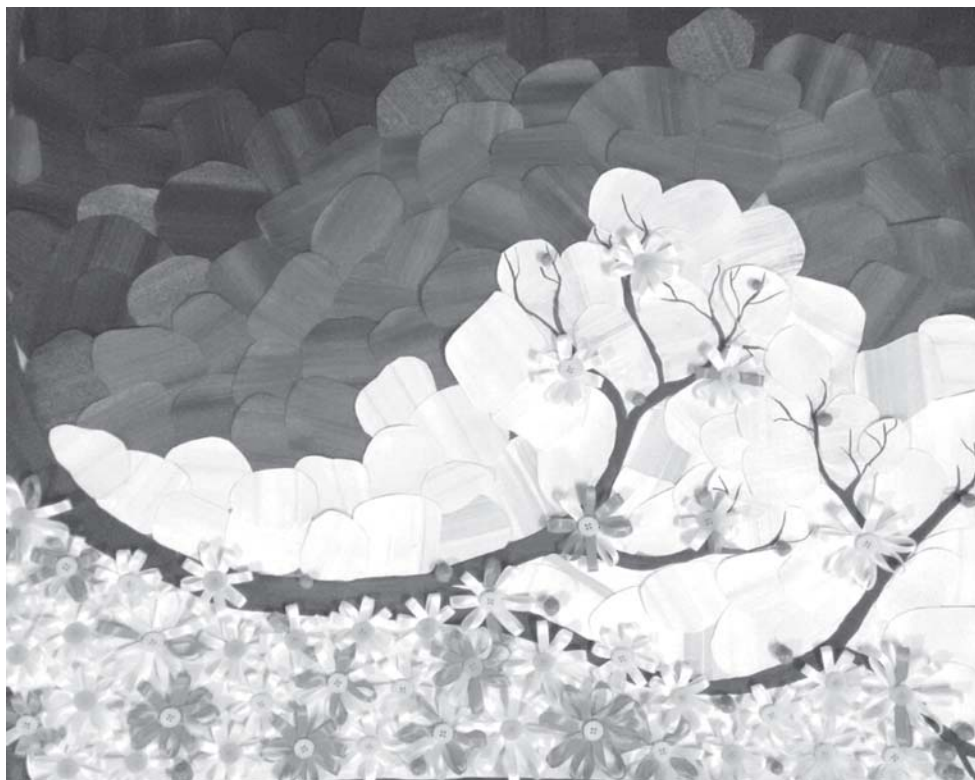
journey started from New Jalpaiguri Station. The breath taking natural beauty that we could witness left us spell bound. On our way we crossed the Teesta river and finally could see its glory.

Our first destination was Rumtek monastery. Buddhist culture thrives in Sikkim and it is evident among the peace loving locals. Here the monasteries are colourful and vibrant with intricate detailings. We also visited the Tashi view point from where we get the best view of Kunchenjunga. Even from afar, a glimpse third highest mountain that stands at an elevation of 28,169 feet is spell binding. We concluded our sight seeing around sunset by taking a ride in the ropeways.

Finally we arrived at the most awaited destination, the Changu Lake. It is also known as Tsomgo Lake and is one of the most spectacular tourist attractions. It is located on the lap of snow covered mountains. It is also called glacial lake. This is located on the road to Nathula Pass. The surrounding alpine forests are home to variety of wildlife including the rare Red Panda. A small temple dedicated to Lord Shiva lies nearby. We were also fortunate to visit the famous Harbajan Baba Mandir and could taste the delicious langar they offer. The memories have been treasured in our heart and we will cherish it life long.

**Malovika Parira**

*ECE, 2<sup>nd</sup> Sem.*



**Nisha Vig**  
*ECE, 6<sup>th</sup> Sem.*



## Depression, the Silent Killer Young India, don't suffer silently



*"The youth of today are the leaders of tomorrow".*

- Nelson Mandela

Every civilisation is hopeful and optimistic for its young generation's vision, perception, dedication and devotion to build up a bright and prosperous future. The world is home to 1.8 billion young people between the ages of 10 years - 24 years and 9 in 10 of the world's young population live in less developed countries. India has the world's largest youth population (356 million). But the flip side of the coin is one in four young teenagers in India suffers from depression (WHO, 2017). The above statistics of depression depict our high level of ignorance about mental health issues which are really alarming in nature.

Though such a large group is affected by depression, there are still stigmas and taboos attached. Nobody feels free and comfortable to talk about depression because of the fear of being discriminated, judged and labelled as mad or insane. This feeling of insecurity forces the affected persons to remain restrained and to get drowned into deeper and deeper state of depression.

It is time to know about depression and it is a real illness recognised by WHO. Depression is frequently used interchangeably with sadness, but these two terms are different. Sadness is a temporary state and related to negative life situations, decreased personal care without suicide ideation. On the hand, depression is more chronic with suicide ideation and the two key signs are loss of

interest in things one likes to do and pervasive sadness or irritability which often stay for more than two weeks. The other symptoms of depression are: feeling of hopelessness, self-blame, loss of self-esteem, feeling of empty or choked in, inexplicable crying feeling, sleep disturbance, loss of appetite and weight, poor memory and decision making etc.

Depending on the symptoms and severity of depression, treatment procedure is provided like counselling, medication or both. It is a sincere request to our youth to deal with depression without any hesitation or stigma. Always seek the help of a trained professional Counselling Psychologist who will listen empathetically, non-judgmentally and make the person understand and explore the troubling issues and situations and will help with different strategies to cope with the situations.

Depression, like any other illness is treatable and accept it as any other physical illness; it can happen to anyone irrespective of IQ, class, caste and creed. Don't fall a prey to depression rather be a fighter to fight against it. So help yourself and your friends and do not let yourself and others suffer silently.

**Dr. Saswati Jena**  
*Counselling Psychologist*

## Revisiting the Silicon Memories



I feel privileged for writing for SLATE after 13 long years. It creates a feel of nostalgia, like a walk to remember.

Over a decade ago, in the year 2004 when I entered Silicon Institute of Technology's (SIT) premises, my eyes were filled with dreams. Dream of having my wonderful stay there, dream of expanding my knowledge base, dream of not just coming out with a certificate but with my dream job in my hand, in short, the dream of becoming a better Sudhanshu than what I was. Now, when I look back I feel happy as I made the right decision of getting into SIT, Bhubaneswar. Silicon has not only helped me fulfill my dreams but it has also helped me to find out my strengths, gave me lifelong friends and made me a better person.

I completed my MCA with 9.3 CGPA and bagged the University gold medal for securing the highest CGPA amongst all MCAs in the university in the year 2007. This was possible due to the guidance from my professors, their encouragement and disciplined course-work at Silicon. I had 3 Jobs in my hand while leaving Silicon - Infosys, Accenture and Aditya Birla Group. I opted for Accenture and am still continuing.

Today, I am working as a Data Architect in Accenture, Hyderabad. I have worked for 5 years in the USA as Solution Architect for one of our Insurance Clients. I worked on various technologies but mainly focused on Data Integration and Business Intelligence. I love writing SQL Codes and design the data model for challenging scenarios. My

professional journey so far has been very smooth because of the strong foundation laid at Silicon. I feel blessed whenever I meet my Silicon teachers or talk to them. They are still there as and when needed for guidance, this makes Silicon unique in my eyes.

Currently, I live in Hyderabad with two amazing ladies of my life, my wife Abha and 1.5 years old daughter Swara.

My message to Siliconites is Dream Big. Do not get carried away with negative vibes around you. Every one of you has unique talent, explore that. There might be thousands of challenges, but believe in yourself and your unique talent. No one can stop you until you don't want to walk. CGPA and grades are good, but not everything. Study to gain knowledge than just getting high marks. Employment in the market is shrinking, but still talented and skilled resources are at the shortage end. Do not just stick to the syllabus, explore beyond. Explore the new technologies and tools in the market. Be innovative; think for out of the box solutions for the daily problems we face.

As the future engineers think what you can give back to the society for a better India. On top of all the professional dreams, make sure you never compromise with the values and integrity. These are the basic ingredients for the success in the long run.

Stay Happy! Stay Healthy!

**Sudhanshu Guru**



The 6<sup>th</sup> semester BPUT syllabus included industrial lectures for the first time. It covers topics of cutting edge technologies and latest industry trend and are taken by resource persons only from the industry with evaluation of the students at the end.

The Industry Interface Cell at Silicon, with the help of faculty co-coordinators from the respective departments, started the Industrial Lecture sessions for the 6<sup>th</sup> semester students from the month of December 2017. The Industrial Lectures conducted during December 2017 are the following:

#### A Talk by Mr. Chandan Malu



Mr. Chandan Malu from Infosys, Bhubaneswar was invited for a talk on Smart Machine Technology for Business Success for all the departments of the institute on 9<sup>th</sup> December 2017.

#### A Talk by Er. P. K. Pattnaik



Er. P. K. Pattnaik, AGM (Elec.), E&MR Div., OPTCL, was invited for a talk on 9<sup>th</sup> December 2017 and he spoke on "Present Protection and It's Relevance on Safe Operation and Control of Power System" to the students of EEE branch.

#### A Talk by Mr. Sudhanshu Guru

Mr. Sudhanshu Guru, Accenture, Bangalore, was invited for a talk on 13<sup>th</sup> December 2017 on the topic on "BI and

DW Basics with Applications" to the students of CSE and IT.

#### A Talk by Mr. Mrinal Das and Mr. Raghevendra Rags



The Departments of ECE, AEI and EEE organized a talk by Mr. Mrinal Das from Sanklap Semiconductor on "Technology Horizon 2022" on 16<sup>th</sup> December 2017. Parallel to this, the Departments of CSE and IT arranged a talk on "Trends in Data Science" by Mr. Raghevendra Rags from DXC Analytics Data Lab.



#### A Talk by Er. Bhaskar Sahu

Er. Bhaskar Sahu (Retd.), BSP, Bokaro and NALCO, was invited for a talk on "Emergency & Protection of Major Equipments in a Thermal Power Plant" on 23<sup>rd</sup> December 2017 for the students of EEE.

#### A Talk by Mr. Amit Kumar Rout

Mr. Amit Kumar Rout, Redhat, Bangalore, was invited for a talk on "Open Source Concepts with PAAS" on 30<sup>th</sup> December 2017 for the students of CSE and IT branch.

#### A Talk by Mr. Swaroop Ranjan Mishra

Mr. Swaroop Ranjan Mishra, MathWorks, Bangalore, was invited for a talk on "The Art of Innovation & AI" on 30<sup>th</sup> December 2017 for the students of ECE and EEE branch.

**Solution to the Problem of last issue:** The problem was: Find a set of nine single digit numbers  $\{x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, x_9\}$  other than the set  $\{1, 2, 3, 4, 5, 6, 7, 8, 9\}$  with a sum of the numbers equal to 45 and the product of the numbers equal to  $9!$ .

**Solution:** The set of required numbers is  $\{1, 2, 4, 4, 4, 5, 7, 9, 9\}$ .

**Divergent Series:** The study of infinite series dates back to 5<sup>th</sup> century BC through the Zeno's paradox. It is one of the important topic and foundation of mathematical analysis or calculus. An infinite series is called convergent if the limit of the sum is a finite value. When this limit is not finite we say that the series diverges. Often we feel that the study of divergent series is not interesting and useless. However there are many interesting facts with many useful applications.

If the terms of a positive term series are in increasing order then the series diverges. As a simple example we can have the series  $1 + 2 + 3 + 4 + \dots$ . Also if each term of a positive term series, even though in decreasing order, is greater than equal to some fixed value then the series diverges. For an example let us have the series

$\frac{2}{1} + \frac{3}{2} + \frac{4}{3} + \dots + \frac{n+1}{n} + \dots$  diverges as each term is greater than equal to 1 even though the terms are in decreasing order.

We have the theorem which says that if a series  $\sum_{n=1}^{\infty} a_n$  converges then  $\lim_{n \rightarrow \infty} a_n = 0$ . However the converse is not true. The simple

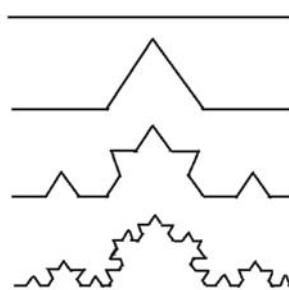
looking series, known as harmonic series,  $\sum_{n=1}^{\infty} \frac{1}{n}$ , is a divergent series. To prove this we have to consider the terms in groups of two, four, eight and so on starting with term  $1/3$ . The sum of each group is greater than  $1/2$  hence the series is divergent.

When we have series of positive terms then we can group the terms in different way but will get the same sum. But this may not be true if we have a series with positive and negative terms. For example the series  $1 - 1 + 1 - 1 + 1 - 1 + \dots$  when grouped as  $(1 - 1) + (1 - 1) + (1 - 1) + \dots$  will give us zero as the limit but when grouped as  $1 - (1 - 1) - 1 - 1 - (1 - 1) - \dots$  will give us  $-1$ . There is a more interesting example. Consider the series  $1 - 2 + 4 - 8 + 16 - 32 + \dots$ . If we group them as  $(1 - 2) + (4 - 8) + (16 - 32) + \dots$  then the series diverges to  $-\infty$ . However if we group them as  $1 + (-2 + 4) + (-8 + 16) + \dots$  then what does the series diverge to  $\infty$ .

If we handle a divergent series with rules that applies only to convergent series then it will cause serious trouble. For example if we take the value of the series  $1 + 2 + 4 + 8 + 16 + \dots$  as  $x$  then  $x = 1 + 2(1 + 2 + 4 + 8 + \dots) = 1 + 2x$ . Which gives us  $x = -1$ . That means  $-1 = \infty$ .

However there are systematic ways to study divergent series using different types of summation and they form an interesting branch of mathematics.

We will wind up this discussion with an application of divergent series to a geometrical problem. Let us consider a curve from Fractal Geometry, known as Koch curve, constructed by the geometer Helge von Koch. The curve is created by taking a segment and then replacing the middle third of the segment by a pair of line segments that form an equilateral bump. When we continue this process we will get the Koch curve which is presented in the following figure for first three steps.



What is the length of the curve when we continue the process infinitely? This problem arises when we study natural geometrical objects like a coast line. What is the length of a coast line which is irregular and winding? It is much longer than the straight

line segment between the end points. If we use a yard stick and make the yard stick smaller and smaller after each measurement then the length we will measure will become longer and longer.

Let us consider the lengths of the figures as above. Let us take the length of the first figure as 1. Then the second figure will

have a length equal to  $1 + \frac{1}{3}$  as we get one extra segment of

length  $1/3$ . The next figure has a length equal to  $1 + \frac{1}{3} + \frac{4}{9}$  as we get four extra segment of length  $1/9$ . The last figure has a

length equal to  $1 + \frac{1}{3} + \frac{4}{9} + \frac{16}{27}$  as we get 16 extra segments of length  $1/27$ . Next we will get 64 extra segments of length  $1/81$  and then 256 extra segments of length  $1/243$ . This time the net increase in length is more than 1. So we get an infinite

series given as  $1 + \frac{1}{3} + \frac{4}{9} + \frac{16}{27} + \frac{64}{81} + \dots + \frac{2^{2n}}{3^n} + \dots$

Where, the terms, after the first term, are in increasing order. Hence the series is a divergent series. It says that in a limiting case the length of the Koch curve will be  $\infty$ .

**Problem of this issue:** A knight is placed on an infinite chess board. If it cannot move to a square previously visited, how can you make it unable to move in as few moves as possible?

Dr. Saroj Kanta Misra  
drsaroj@silicon.ac.in



## Contributing to Greenness

The importance of plantation & ways to preserve our environment is a topic we have been harping on since long. It is well known that trees contribute to the environment by providing oxygen, improving air quality, climate amelioration, conserving water, preserving soil. Let us revisit the same concept in the form of some famous quotes by eminent writers and personalities with a hope that we carry forward our mission to preserve mother earth.

*"The trees are God's great alphabet.  
With them He writes in shining green.  
Across the worlds His thoughts serene"*

- Leonora Speyer

*"If trees could scream, would we be so cavalier  
about cutting them down? We might, if they  
screamed all the time, for no good reason"*

- Jack Handey



*"It is not so much for its beauty that the forest makes  
a claim upon men's heart, as for that subtle  
something, that quality of air that emanates from  
old trees, that so wonderfully changes and renews  
a weary spirit"*

- Robert Louis Stevenson

*"No town can fail of beauty, though its walks were  
gutters and its houses hovels, if venerable trees  
make magnificent colonnades along its streets"*

- Henry Ward Beecher

*"They kill good trees to put out bad newspapers"*

- James G.Watt

*"If a tree dies, plant another in its place"*

- Linnaeus

*"Someone's sitting in the shade today because  
someone planted a tree a long time ago."*

- Warren Buffett

*"If you think environment is less important than  
economy, try holding your breath while you count  
money"*

- Dr.Guy Mepherston

We, SGC members, are trying to make an effort to create awareness for a cleaner environment than we are living in. A plantation drive was carried out in the campus during Swachh Pakhwada, where students along with the faculty members played an active role. Plants and trees were planted throughout the entire college. Swachh Pakhwada, meaning Cleanliness in a Fortnight, is a series of events conducted with an objective of bringing a fortnight of intense focus on the issues and practices of Swachhata by engaging Government of India Ministries in their jurisdictions. In the big picture, an annual calendar is pre-circulated among the Ministries to help them plan for the Pakhwada activities. Such events which brings the government and institutes together to share the responsibility towards environment will create a more sustainable future. SGC members played their part in the events organised in the Silicon campus enthusiastically.



*Content Contribution: Preetishree Mallick*

*4<sup>th</sup> Semester, SGC Member*

*Compilation & Value Addition: Prof Seema Behera  
FC, SGC*



#### Editorial Team

Priyambada Pal  
Dr. Jaideep Talukdar  
Ananya Roychoudhury

#### Members

Dr. Saroj Kanta Misra  
Chittaranjan Mohapatra  
Tyagraj Thakur

#### Student Members

Akampan Gupta  
Disha Kumari  
Preetika Patra  
Ritika Gupta

#### Media Services

G.Madhusudan

#### Circulation

Sujit Kumar Jena

Make your submissions to  
[publication@silicon.ac.in](mailto:publication@silicon.ac.in)

# Silicon

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Publication Cell:

## Silicon Institute of Technology

Silicon Hills, Patia, Bhubaneswar - 751024, Odisha, India

Phone: 9937289499 / 8260333609

e-mail: [publication@silicon.ac.in](mailto:publication@silicon.ac.in) // Website: [www.silicon.ac.in](http://www.silicon.ac.in)



**Bhubaneswar Campus:**  
Silicon Hills, Patia,  
Bhubaneswar - 751 024



**Sambalpur Campus:**  
Silicon West, Sason  
Sambalpur - 768 200