Silicon
...beyond teaching

Second Issue SLATE 2022

SLATE

Silicon Language for Arts Technology & Education

Our Vision: "To become a center of excellence in the fields of technical education & research and create responsible citizens"

From the Editor's Desk...

Dear Readers,

While SiliconTech is slowly bouncing back to normalcy after many years of aberrant academics rendered by Covid-19 pandemic, numerous institutional achievements precipitate this process by filling us with enthusiasm. The most recent achievements happen to be Start-up Odisha recognizing SiliconTech as an incubator, our branch topper students receiving university gold medals and the institute winning the prestigious C. V. Raman Award for Academic Excellence. These make us regain confidence and get enough impetus to keep striving for further excellence. However, the most significant academic achievement this year happens to be our maiden PhD research programme in which forty-two students have enrolled. This achievement has definitely taken our academics to the next level, making all Siliconites proud.

Last quarter we introduced SLATE to you with a makeover by eliminating news and abridging the magazine. From this issue on, we will publish one highlight of Silicon life by including one Silicon-Story. This time we have covered the story of Silicon General Store, the hub of student activities at the institute. We do hope this feature will give you an engrossing reading experience.

Do let us know about your comments on this.

Happy Reading!

Priyambada Pal
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EDUCATING US
Lucid Dreaming

Dreams are true while they last, and do we not live in dreams?

– Alfred Lord Tennyson

Dreams have always been somewhat of a mystery. Some people dream, some don't, many live in their dreams, and several others don't. Sometimes, your real life might be affected by how and what you recall from your dreams.

A lucid dream occurs when people are asleep but apprehensive that they are dreaming. In this state, a person can take control of their dream's narrative to some degree, guiding and directing the course of their dream. This type of sleep is associated with mindfulness and the reflection of this mindfulness is often associated with what is known as metacognition. Metacognition involves the mindfulness and understanding of your thought processes.

Research suggests that lucid dreaming and metacognitive functions partake in analogous neural systems. This means that people with heightened abilities to monitor their thoughts may be more likely to experience lucid dreams. The research shows that the anterior prefrontal cortex, a part of the brain associated with higher levels of self-reflection, is larger in people who report having frequent lucid dreams. The researchers suggest that people who are more likely to engage in such self-reflection during normal waking life are also more readily able to take control of their dream.

People having lucid dreams know that what they are seeing is not quite real. It is their imagination or thinking that creates this dream. The people who have non-lucid dreams face the glitch in knowing the difference between the real world and the world of dreams. The fact that they feel what they are seeing in the dream is happening in the real world.

One interesting thing about having these dreams is that all we see in our dreams are the things that we have imagined or thought of. We are aware of the things because we had already imagined this. They are aware of the fact that what they are seeing is not real but still they imagine their visualization to be in front of them. After all who will not want to have a dream in which they are the protagonist having some superpower to save the world from danger?

The loveliest thing about having a dream is that we can be in a world that is created by us. There will be no barriers to the imagination we can put into it. Some memories are special. They will be with us for quite a long time. Whenever we go through them, they will bring a smile on our face. We always store these dreams in our dream journals. It is quite helpful throughout our life in inspiring us and motivating us for the journey ahead.

Manas Ranjan Padhy
4th Sem

HEALTH WATCH
Smoking –
A Doorway to Death

"Smoking is Injurious to health."
"Smoking Causes Cancer."

What an irony it is that even after a threatening photo and label being attached to the cigarette packets, many people, starting from teenagers to the old still continue the intake of harmful toxicants! It always starts from the ignorance of youngsters who believe *'ek puff se kuch nahi hoga'* (nothing happens by smoking a single puff) but within no time they get addicted to it. Several people also believe in the myths such as consumption of cigarettes or other toxic substances leads to a peaceful state of mind and provides relaxation.

According to reports published in 2020-2021, India has 267 million tobacco users per year, which narrows down to approximately 73 lakhs tobacco user per day, i.e., 3.1 lakh tobacco users per hour and this data has been reported by assuming every user smokes once a day, which is a sarcasm in itself and is far from reality.

Now, the most important question is how to reduce these numbers and gradually put an end to smoking?

The answer was always with us. People must be made aware in every possible way. Promotion or advertisements of toxic substances on television and in market places should be boycotted and smoking should be discouraged in the grass roots level. Public smoking should be made a punishable offence and strict action should be taken against shops selling cigarettes to the minor. Most important of all, the mind set of people must be changed to stop this deadly menace that has been persistent over several decades.

Recently, we all witnessed a global pandemic. Untimely deaths and life's unpredictability has made us realize the value of our near and dear ones. The total death toll during the entire pandemic in India counts to 525,116 whereas, lives lost due to tobacco usage is 1.35 million per year! Yet, we do not understand that tobacco is the primary cause of deadly diseases like lung cancer.

All of us must make our near and dear ones aware and spread the precautionary message to help them overcome their habit. It will consequently help our entire country to fight against this hazard.

Rome was not built in a day, and neither will this be achieved in a single day, but yes someday, sometime, someone has to take the first step and 'now' is the time to begin.

Take Care.
Jai Hind, Jai Bharat.

Ritish Mohanty
4th Sem, ECE

MENTAL HEALTH:
The Power of 'Hope'

Hope is a waking dream – Aristotle

"Be hopeful or be positive" are the widely stated statements in difficult times. During pandemic this statement was extensively used by most of us to overcome the challenging period. Being hopeful gives an impression that something good will happen in future. Hope is a realistic expectation about the positive outcome and the individual has some control over it. Hope is purely positive as it is the only positive emotion being cultivated in negativity and uncertainty. It is not completely inherent, rather, it can be stimulated and cultivated. It is an active approach to life.

As per the famous Psychologist, Charles Snyder, hope has three components like, Goal (Specific), Pathways (Plan and strategy) and Agency (Self belief). Hope gives the scope to reshape negative thoughts and to perceive the situation in a more logical way. Cultivate hope by, finding sense of meaning in life, setting SMART goals (**S** Specific, **M** Measurable, **A** Achievable, **R** Realistic, **T** Timely) making rational Self-reflection, recording your success, strengths and resources, surrounding yourself with positive people, altering the goal / plan when it is not working

Hope has many positive impact both on physical and mental health of people. Studies show that hope is related to academic achievement and professional success. As neuroscientists found that being hopeful secrets one chemical which blocks pain and accelerates healing. The power of Hope needs to be acknowledged for a better life.

Dr. Saswati Jena
Counselling Psychologist, SIT-Bhubaneswar

MY CYBERSPACE

Cloning/Card Cloning/Card skimming is a kind of fraud or theft wherein the fraudster makes an unauthorized copy of a legitimate credit/debit card. A digital copy of the card information is made with the help of concealed electronic scanners or devices installed at card terminals.

Small devices called skimmers are affixed to ATMs & amp; POS terminals. These devices can read card information covertly by scanning the magnetic strip on the physical card. The collected information is then stored and downloaded to a separate card or used to overwrite the contents of an already stolen physical card. This activity is stealth in nature as the victim's physical card is not stolen. Cloning is a bit difficult with cards that require PIN for authentication. In such cases it is required to observe and record the PIN number as well.

Though PIN as an authentication makes cloning difficult, but contactless technology evolving rampantly concealed scanners are being used in crowded places to remotely scan card information without the victim's knowledge.

There are several guidelines in place to avoid being a victim to such attacks. Some of them include: Card guards, Frequent PIN change, Looking for tampered card slots, Covering the keypad while keying the PIN, and not storing card information in the phone. Always set the two step authentication. Reviewing physical infrastructure regularly to detect the presence of skimming devices, financial institutions implementing EMV chips, and building customer profiles. Most importantly, never ever allow any staff to swipe your card in a remote machine.

Dr. Sushree Samita Rout
Associate Professor, CSE Dept.

Dr. Biranchi Narayana Rath Sr. Asst. Professor, EIE department, has received a grant of 18.30 lakh from the Govt. of India under the TARE SERB Scheme to conduct research in the area of active noise control. In this interview with Sayeda Mahenoor, CSE 2nd sem, he talks elaborately about the importance of his research.

Sayeda: Sir, Congratulations on your remarkable achievement. Please tell us about this project.

Dr. Rath: Thank you very much. This is a project under the Teachers Associateship for Research Excellence (TARE), Science and Engineering Research Board (SERB), Government of India to carry out research in the area of active noise control. The project is titled as 'Discrete-Point Control Based Adaptive Active Noise Regulation System Implementation Using Deep-Learning Regression Techniques'.

Active acoustic noise control is essential for many specialized laboratory and industrial establishments. With the advent of evolutionary and data-driven computational techniques, a higher degree of flexibility has been achieved with noise control in terms of the parameters to be optimized in the process (ex: selective attenuation of particular types of noises). The objective of this project is to implement deep learning techniques for optimizing the performance of active noise control system to ensure a user adjustable control

IN CONVERSATION WITH ...
Dr. Biranchi Narayana Rath

for acoustic noise ingress within a particular region ("quiet zone") by noise level estimation through discrete point measurements in and around the control region and optimizing the location and spectral characteristics of anti-noise sources for best results. The project duration is from December 2021 to December 2024.

Sayeda: Would you like to speak about the challenges you face while working on this project?

Dr. Rath: It has been just six months since the inception of the project. This duration has been mostly utilized towards finalization of equipment for the research, lab set up, paperwork etc. Therefore, no major challenges have been faced yet. However, it is a task to balance college work and research. A major part of the research has to be carried out at the host institute (CSIR), requiring me to visit there quite often; our college has been gracious enough to accommodate my requests for the said lab visits. I am prepared to tackle any challenge that arises during the research work.

Sayeda: How can Siliconites benefit from this project?

Dr. Rath: This project deals with an interesting subject which will intrigue students who hope to do research in this field. Any Siliconite, willing to learn about this or wanting to work in this field, may approach me any time. In fact, currently some students are working with me.

Sayeda: What advice would you like to give to budding researchers in your area?

Dr. Rath: Research means to keep searching and exploring in spite of dead ends and failures. So, my dear young researchers, keep exploring.

A Graduate's Perspective ...
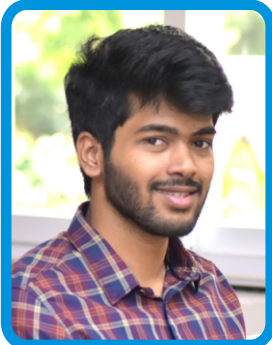
SWAPNA SANJOG MOHANTY

CSE, Amazon – 25 LPA

Swapna Sanjog Mohanty of CSE branch has recently been appointed by Amazon with a pay package of 25 LPA. He was interviewed by Akankhya Sahoo of CSE, 2nd sem, for this quarter of SLATE.

Swapna Sanjog went through 30-40 interview experiences of Amazon at GFG and that helped him a lot to get through the online assessment and interviews. The interview experience of every company gives one some idea about their process of hiring, level of questions they ask and this reduces the chance of rejection.

He says "I did face difficulties, but no matter what, you have to take some time out for your goal, and maintain consistency. Sacrifices are essential to manage time".

In his 1st year, he did some research about how to get into product-based companies and enquired about the level of preparation required. "In the 1st year I mainly focused on programming language (C / C++) and some basics of Data Structures and Algorithms. In the 2nd year I took some GFG course of DSA but took a rather longer time to complete the course. At last, I used the shut down during the pandemic as an opportunity. In my 4th Sem I revised all concepts and started solving problems, every single day no matter what, just to maintain the consistency and that's what helped me to get good ranks in LeetCode, code chef, Codeforces etc" says Swapana.

Swapana suggests that you should enjoy the process of whatever your are pursuing, which might at times be frustrating, but as long as you have reasons to enjoy it you will dare to be different.

CHANDAN SINGH

ECE, Mentor Graphics – 20 LPA

Chandan Singh of ECE branch has been selected by Mentor Graphics with a pay package of 20 LPA. He too, was interviewed by Akankhya Sahoo of CSE, 2nd sem.

Chandan started preparing for his placements in his third year with the help of his seniors and friends working in core companies. He picked up the subjects like digital, CMOS etc., since questions in the interview rounds primarily come from these areas. He also suggests that people preparing for core jobs must practice coding on a daily basis because coding enhances your problem solving skills.

He says, "I work as a VIP developer. Our team builds verification IP's for certain network, transfer and memory protocols. I basically work on ethernet which is a network protocol in data communication. We use system Verilog and UVM to build the verification IP's".

To be able to upskill oneself Chandan suggests that students should build their professional networks to learn about the new trends in job. In the words of Chandan, "We are from a college whose students have cracked the UPSC with their consistent hard work; it clearly shows that if we push ourselves then we can achieve what we aim for".

STUDENTS' CORNER

Be Truthful

This is the story of a boy staying in a village with his parents. He was the only son of his parents. His name was Atish. He was a pretty boy with many dreams. He completed his 10th grade with flying colours in a government school. He was happy when his parents made his admission to a reputed college in his city. Atish had a dream of becoming an engineer. He asked his parents for a loan in order to fulfil his dreams, and they got him admitted to a luxurious hostel. There came a day when Atish finally had to leave home to join a hostel to fulfil his dreams. When he went to his room, he met his roommate. His name was Rudra. Rudra was from a western country. Looking back, Atish felt embarrassed because of his attire, but he had a strong will to complete his goal. His first semester was good. He and his family were very happy. But later on, looking at Rudra, his way of dressing, his lifestyle, and his friend circle, made Atish jealous and he wanted to have the same. In the process, he realised his pocket money was not enough to buy clothes, so he started cheating his parents by asking for money from them for different reasons. He slowly started to miss his classes and started to go to restaurants, pubs, etc. He started to follow everything Rudra used to do. As a result of all of this, he was eventually denied the opportunity to sit for his exams due to a lack of attendance.

When his parents decided to come to his college to meet him and give him a surprise, they were mesmerised to see their son. For an instant, they could not recognise their son. Atish was shocked to see his parents. Rather than being happy, he was sad and very angry. Atish smartly made his parents realise the way of life in the city. He made his parents happy by telling them all possible lies about the exam and his parents' being illiterate. They believed everything and happily went back home.

Atish continued to cheat his parents till one day a letter from the college went to his parents without his notice. When his parents came back to meet the principal of the college, they were shattered into pieces. They heard about Atish's attendance, behavior and much more. They even spoke to all the people associated with Atish and came to the conclusion that the lifestyle of the city had changed their son. Out of shock, his father got a heart attack, and because of the financial problems, they had to lose him.

Atish realised his fault and apologised for it, but it was too late. He lost his father, his dreams were also shattered as his mother alone could not afford the fees of college. Atish realised his fault and started rebuilding the trust. He made his life normal like before, but he missed his father because of his silly mistakes.

Being truthful to parents is very important. They are the people who make your life beautiful and fill it with joy. Cheating them is the biggest mistake you will ever make. Respect them and they will give you blessings, not only from them but also from God.

Abhinav Kar
4th Sem

What does one see before Death?

The tale of a Greek hero, Er, the son of Armenius, dates back to 300 BC. Er died in a war. His dead body was found ten days later, on the battlefield. Where the other dead bodies were in a state of decay, Er's body remained unaffected. He was taken to his home for burial, and when his body was kept on the pyre, to everyone's surprise he rose. He then spread the word of his near-death experience. He claimed that he saw two doors, one

that led to heaven and the other to hell. Since then, people have believed in heaven and hell after death. But scientists refused to accept this theory since there was no evidence for it. Today, a whopping 5% of all people who have been on the death bed have experienced the near-death state. According to most of them, heaven and hell exist. Therefore, after approximately 2300 years, scientists have started researching on what a person sees before death!

Some researchers suggest that our brain continues to work for 10 minutes after death. Few people have discovered that a person experiences all the events of his lifetime in the order of the most recent event till birth. But the question arises, what led to this discovery and what evidence stands as testimony to these claims?

The human brain consists of some 100 billion neurons that communicate with each other through electrical signals, known as brainwaves. There are five types of brainwaves occurring at various frequencies and representing various activities of the human body.

Alpha waves are the slow and large brain waves. A huge number of alpha waves are detected if we are closing our eyes and imagining a situation of solace. This wave is a bridge between the conscious and subconscious mind. It is associated with extraversion, creativity and good mood. If this wave dominates, then our mind will always be in a relaxed state.

Beta waves are smaller and faster waves which deal with intellectuality, logical, analytical reasoning and concentration of our mind. These waves are predominantly visible during a state of alertness.

Delta waves are those waves which are linked with deep sleep. These are the slowest waves with the highest amplitude. The dominance of these waves signifies a state of coma.

Theta waves are related to daydreaming and mental inefficiency. A large number of these waves denote lack of attention, learning disorders or head injuries.

Gamma waves are the fastest of all waves. These waves are representative of information processing, storage, learning and memory recall.

According to studies, in the last few minutes of death of a living being, rapid movement of gamma waves is seen in comparison to other waves. Hence, reaching the conclusion that, before death a person sees flashes of his whole life.

This particular field of science is still under study and is likely to discover more interesting facts which will astonish our ordinary mind by revealing unventured avenues of our extraordinary mind.

Arpita Mohanty
6th Sem, CSE

ALUMNI SPEAK
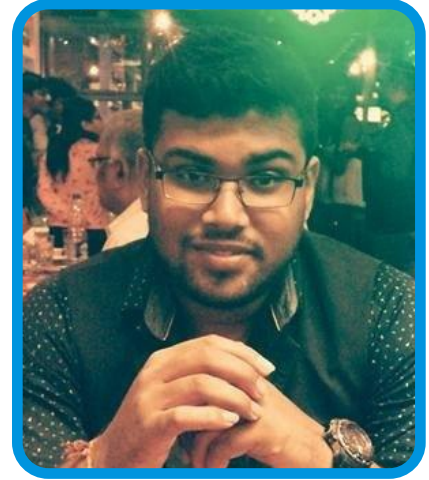
It is kind of strange how a single word determines your course of actions ahead. It all started with the word 'legacy' that surprisingly brought three siliconites together, back in the fall of 2014 – Subrat Kumar Swain (CSE) i.e., me, Preetish Priyadarshi Samal (CSE) and Anurag Bhol (IT). Our trio believed strongly in making a mark and building a legacy that stays. Amid our college days we were really fortunate to have the creative freedom of expression through various events crossed over different clubs, and that's where we could believe that we can create a legacy. A legacy that will stick around and a legacy that brings everyone together, the legacy of celebrations. And on that note we decided we will not let go of this even when we got through our college days. We kept hitting rock bottom in synching with each other after college had given the new set of jobs we had picked up that took us different ways. None the less, the vibe we shared still coexisted among the three of us whenever we sat down and never was a day we sat and did not discuss about our passion for events and gigs. We decided to take baby steps alongside our jobs where we kept pushing ourselves to work on the elementary things to polish ourselves on various aspects of the event market and what affiliate segments we can carry along. Steadily, we added Merchandising and Entertainment to the scene which straightaway picked up momentum to give us that boost to experiment around it. Events are definitely our prime forte which needs a tidal amount of promotion and belief. That belief brought us back to our homeground SIT, BBSR aka SiliconTech in 2019 to setup the arena for its musical events - Consonance and Rhythmnova alongside the Annual Alumni Meet. After being the merchandising partner of Techfest Noesis 2019, we made it as the official event partners for the Cult fest Zygon in 2022. As a matter of fact we got to relive our college days, when we used to jolt between post to pillars, making sure we got the events done. We progressed with the settings with the same emotions and enthusiasm which we had during our stay at SiliconTech. We will not sugarcoat the glitches from our end in the process but we definitely pulled out every string to give the students both on and off the stage the best of the celebrations with minimal hassles to the faculty coordinators. We are not those three guys who got bored with their jobs to kickstart a startup, but we are those three guys who envisioned a legacy, we envisioned Bash n Blues, where we celebrate you.

Subrat Kumar Swain, Anurag Bhol
Preetish Priyadarshi Samal
2018 Graduating Batch

ABD:
THE CYNOSURE OF SILICONTECH

Our diction alters with the passage of time. In the present time, people feel the need to express their feelings with a certain rawness so as to depict their innermost feelings as lucidly as possible. In doing so, they let their emotions predominate over the syntax of language. One of the cliched expressions currently in use is where human beings are being referred to as homes. Keeping in sync with the trend, the Siliconites refer to Ashok Bhai Dukan (ABD) and the man behind the store, Mr. Ashok Kumar Dhall, as their 'home'. Mark here, the trend is not using the cliche but, rather letting the way they feel decide their language because home is a place where one lives as a member of a family.

Since its inception in 2003, the Silicon General Store has been managed by Mr. Ashok. It was set up even before the campus had got its hostels. During that time, students used to stay in guest houses located outside the institute. Food was prepared for the them in the college canteen, which is presently converted into the workshop and for buying other essential items required on a daily basis they resorted to the General Store. Gradually, ABD became one of the most popular places in the institute. It offers the students to much on their favourite snack, bond with their seniors, juniors and batchmates, indulge in banalities, gather campus news and indulge in gossips and notes sharing. It is also the first choice among faculty members and staff for ordering refreshments and snacks.

Within the store and also outside it, Mr. Ashok prefers to be called as Bhai, meaning brother, by the Siliconites. However, he not only insists on being as addressed as a 'brother', but also looks after the students' needs and cares for them like an elder brother. And the Siliconites reciprocate the love, care and respect.

No matter where we go into the far, wide world we often return to our home to cherish the memories we have made there. SiliconTech alumni often drop in at ABD long after graduation. Be it dealing with the after effects of Fani or the dire situation of Covid-19, they made sure Ashok Bhai is doing good and ABD is standing strong. While speaking about his bond with the students, the teary-eyed Ashok Bhai said he has seen the students at their best and also at their worst. And at all times, he only made sure that he stood by them as a rock. He recounts that Siliconites who visited him as students, including Mr. Satish Das (Assistant Professor, ECE), Dr. Debasish Nayak (Senior Assistant Professor, ECE) and Dr. Biranchi Narayan Rath (Senior Assistant Professor, ECE) now visit him as faculty members and it fills his heart with joy to see the Siliconites excel.

After spending a few months in the college, gripped by an unknown fear of parting away from the places and people we love, students feel a slight tinge every time they leave ABD. The final walk down the lane of ABD is as nostalgic for the students as it is for Ashok Bhai to bid them farewell because as said by Ruskin Bond nostalgia is nothing "but an attempt to preserve that which was good in the past".

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