Silicon

...beyond teaching

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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:

"All good stories live on forever. They become a part of the people who hear them"

– Reader's Digest

It's a warm and hearty welcome to the undergraduates who have joined the Silicon Family in the academic session of 2023; and a huge congratulation to those who have been promoted to the higher semesters. But the list of our valued readers does not end here as quite a number of professionals, technocrats and engineers continue to be our readers too, and I thank them for it.

Many of us have long ago crossed the boundaries of being a student, but we should not be surprised that learning is a life-long process and it happens better when our lessons go "…beyond teaching". And thus, in this respect we are all students throughout our life: learning from all that we do, making our own good stories of fortune and failures worthy enough to be narrated to the generations to come. The child in us lives on, as long as we choose to, and our entire journey is but an accumulation of our achievements and the milestones we cover. Kudos to that child within us who registers them all!

Our newcomers would be glad to know that the Institute which is already known for its quality education, state-of-the-art labs and student achievements, is now well- equipped to start several advanced courses and post graduate programs, research and technical advancements, and more innovative measures to be introduced in the teaching-learning process, once we become a university.

The student community, being an integral part of the Silicon family, is now vested with more responsible tasks of engaging with academics. At the Institute, the students also get ample opportunities at developing themselves in several co-curricular and extra-curricular activities with a scope for games and sports activities as well. The 'Sun Deck' at Silicon, the Institute's sports complex, provides all facilities for the sports person in you to express yourself. With several other clubs, chapters and societies, the Institute facilitates a platform for the holistic development of its students. Thus, we look forward to a very bright future of our students: the upcoming engineers of the country.

With this, I wish 'good luck!' to every one of our readers who is in the process of making their own success stories.

Happy Reading to all of you.

Ananya Roychoudhury
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EDUCATING US
Little Space

Childhood is a beautiful phase of life where we live to love, to be loved, and to grow. We're nurtured for the future and brought up in the present. It's like a safe place on the journey of life. As kids, one has absolutely no worries about the stressful race that adulthood brings. All one cares about is the world that revolves around them. One only thinks of the sky as so blue, or just stare at the pretty stars. Childhood, hence, is probably the most joyful stage of life. But has it ever occurred to you what could it be to not have a blissful childhood? How different could it be if that joy and freedom were not retained?

Well, in the society, with people of different ideologies and behaviors, we find their unique experiences which shapes their exceptional personality. The reflection of a catastrophic early life engenders the possibility of developing "age regression," commonly known as the "little space syndrome". Generally, people with missed developmental stages and past neglect are likely to develop this syndrome. The causes might also include verbal or physical abuse, physical assault, or even more sensitive experiences.

Unlike other psychological disorders, "age regression" is a positively developed unconscious coping mechanism. It works like a momentary escape from the present reality that involves a reversion to a younger mental age to feel less stressed. People with this headspace often appear to be cautious of what they feel and use it as a protective layer against dealing with intrusive emotions like anger, anxiety, or fear. However, this does not mean their failure in self-compassion or self-empathy. The return of their childlike mental age signifies their ability to deal with problems from a kid's perspective. This cognitive restructuring allows them to make rational decisions once they are conscious again. Often, regression is used along with hypnotherapy by psychologists to help in the anamnesis of distressing memories so that one can let their unfiltered emotions out. It can be considered a therapeutic form of defense against untreated trauma.

Age regression seems to be a reflex rebirth or an opportunity to relive childhood. It's a pathway to resolve vandalized emotions, and the best way to overcome it would be by talking to a close person or consulting a therapist and finding healthier ways to cope. Every individual has the right to feel and express emotions, be it a child or an adult. One does not need to be age-significant to be humane. Feelings are completely valid and valued, the notion being "feel, deal, heal".
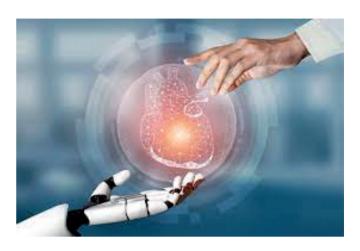
Aradhana Dash
3rd Sem CEN

HEALTH WATCH
A Glimpse into the Evolving Landscape of Healthcare

In the face of constant advancements in technology, research, and global health challenges, the healthcare industry is continuously evolving to meet the ever-changing needs of individuals and communities. With the rapid pace of innovation, it is crucial to stay informed about the current healthcare landscape to understand the latest trends, breakthroughs, and concerns shaping it.

Particularly during the COVID-19 pandemic, telemedicine and digital health have seen a great uptick in popularity and usage. With the help of these technologies, healthcare services are now more widely accessible, thanks to remote consultations, virtual treatment, and remote patient monitoring. Patients may access specialists, get prompt medical advice, and manage chronic illnesses from the convenience of their own homes. Healthcare delivery is further enhanced by the combination of wearable technology, mobile applications, and electronic health records.

Artificial intelligence (AI) and machine learning (ML) are revolutionizing healthcare by augmenting diagnostics, drug discovery, and personalized medicine. AI algorithms can analyse vast amounts of medical data, aiding in the early detection of diseases and the development of tailored treatment plans. ML techniques can also identify patterns and predict outcomes, empowering physicians with valuable insights to make informed decisions. Additionally, AI-powered robots and automation are streamlining administrative tasks, enhancing operational efficiency, and reducing human errors in healthcare settings.

In recent years, the significance of mental health has received wide awareness. Access to mental health services and resources has improved as a result of increased awareness, destigmatization initiatives, and lobbying. With the advent of tele-therapy platforms and mental health software, remote counselling, mindfulness training, and emotional support are now available. Employers and educational institutions prioritize mental health programs, promoting a more comprehensive view of wellness.

Keeping personal health information private and secure has become a top priority as healthcare becomes more and more digitized. Sensitive health information is protected by legal frameworks, including the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA).

The current state of ongoing healthcare shows a dynamic environment where research, technology, and patient-centered treatment are intertwined. We can create the conditions for a healthier future by remaining aware and carefully utilizing these breakthroughs.

Prayas Raj Mahapatro
7th Sem, CSE

FOOD FOR THOUGHT
Serenity of Mind and Body

In today's fast-paced world, where we often find ourselves juggling multiple responsibilities, it is crucial to address the pressing health concerns faced by teenagers. Our adolescent years are a time of profound growth and self-discovery, and nurturing both our minds and bodies becomes paramount. In this edition of *SLATE*, we aim to shed light on these health issues and provide practical suggestions for overcoming them.

As teenagers, we find ourselves battling various health challenges, both physical and mental. Sedentary lifestyles, coupled with unhealthy dietary choices, have given rise to an epidemic of obesity, heart disease, and diabetes among our age group. Additionally, the unprecedented stressors of academic expectations, peer pressure, and societal demands have taken a toll on our mental well-being, leading to an alarming increase in anxiety and depression.

To combat these issues and foster a generation of resilient individuals, we must prioritize self-care and make conscious choices to improve our overall health. Here are a few strategies that can guide us on this transformative journey:

1. Embrace Balanced Nutrition: Opt for a wholesome diet rich in fruits, vegetables, lean proteins, and whole grains. Avoid excessive consumption of processed foods, sugary drinks, and snacks laden with unhealthy fats.

2. Stay Physically Active: Engaging in regular physical activity is vital for maintaining a healthy weight, boosting energy levels, and improving overall well-being.

3. Prioritize Mental Health: Recognize the importance of mental well-being and seek support when needed. Cultivate stress management techniques like meditation, mindfulness, or talking to a trusted friend or counsellor.

4. Foster Healthy Relationships: Surround yourself with positive influences and nurturing relationships. Build a support system that encourages open communication and provides emotional support during challenging times.

5. Limit Screen Time: Excessive screen time has been linked to a range of health issues. Set limits for the use of electronic devices.

6. Sleep Well: Establish a consistent sleep routine to ensure you get the recommended hours of restorative sleep each night.

Addressing these health challenges requires patience, commitment, and a collective effort. Let's create an environment that encourages healthy habits, promotes well-being, and fosters belonging. Small steps can lead to significant transformations.

Anshuman Mishra
5th Sem EEE

MENTAL HEALTH:
Growing Insecurities Among Teenagers

Change is an inevitable part of life. With every stage of life comes certain changes and adapting to them is necessary for an individual.

In teenage years the growing insecurities, if not handled properly, aggravates as they enter into adulthood. The young mass seek acceptance, failing which they start questioning their own self. Becoming picture perfect is everyone's dream, but deviation in any form creates body insecurity among many. The desire to get the best of everything in comparison to their fellow mates causes dissatisfaction, leading to insecure feelings.

Career is another challenge. What to do? How to do it? Where to do it? These are some of the questions which comes to mind at this stage. There are many apprehensions and pressure a young adult faces, and the competition creates stress.

Points to keep in mind
- ✦ You are a unique individual (Belief in self).
- ✦ Don't compare yourself with others (Make your mark).

There are many more insecurities which a young adult faces and all these insecurities gives rise to stress, depression, frustration, loss of self-esteem, etc., Moreover, at times such insecurities can lead to even more dangerous consequences like self-harm or suicide. The mental health aspect of the youngsters needs to be addressed and taken care of. They should be heard and understood. Instead of being angry at them and expecting too much, better ways of making them understand things can be initiated. Steps can be taken to make them responsible over being demanding. That's where a professional counselling psychologist can often save the day.

Ms. Ritu Chowhan
Counselling Psychologist, SIT-Bhubaneswar

MY CYBERSPACE
ChatGPT & Cyber Security

Electric vehicles (EVs) are rapidly gaining prominence in the automobile sector primarily because of the significant reduction in long term running cost and the carbon footprints. However they are also are at the center of scrutiny in terms of cyber-attacks because of its inherent components like the Electronic Control Unit (ECU), Communication System and Public Charging Stations. The ECUs are basically computer systems which can be manipulated by attackers to take control of the brakes and steering and in turn have disastrous consequences. The EVs are also vulnerable in terms of data theft like stealing of sensitive information such as current location, personal data, location and driving history from its onboard diagnostic port which is an integral part of the vehicle's communication system. The public charging stations which are remotely located can be tampered with to gain access to certain components of the vehicle.

Evs are a part of wireless sensor networks which are susceptible to Jamming Attacks wherein attackers can prevent crucial sensors from communicating with the ECU and the servers as well, leading to wrong estimations. False data may be injected about battery status, location and temperature. Vehicle to Vehicle communication attacks may happen wherein a vehicle may refuse to share data with its nearby vehicles or may modify data and send wrong or malicious information. Apart from these, EVs are vulnerable to many other attacks like Grey Hole attack, DOS attack, Replay attack, Router Forgery and Spoofing. Much of the threat spectrum arises from the components and the connection between vehicles and the servers that comprises the Internet of Electric Vehicles architecture. So it's up to the companies to strengthen the security features to avoid such and many more attacks that the future awaits.

Dr. Sushree Samita Rout
Associate Professor, CSE Dept.

IN CONVERSATION WITH ...
Dr. Jayant Praharaj

Prof. Jayant Praharaj from the Department of Electronics Engineering has rich experience in Semiconductor Electronics from Cornell University. In this interview with Manas Ranjan Padhy of 7th sem CEN, he discusses elaborately the future prospects in this area.

Manas : Greetings sir. You joined the SiliconTech Family in September, last year. How has your experience been so far?

Prof. Jayant : It has been a wonderful experience at SiliconTech. I got to interact with a lot of undergraduate students, PG students and faculty members. The students are very keen and some of the classes have been very interacting and fruitful. It has been a positive experience.

Manas : With your impressive academic background, holding a Ph.D. and MS degree with a specialization in 'Semiconductor Electronics' from Cornell University, Ithaca, how was your journey abroad away from your country?

Prof. Jayant : It was both exciting and challenging. I went to Cornell to get the chance to work in both theory and experiments. The university provided state-of-the-art semiconductor technology facilities. At that time, I wanted to explore the new semiconductors other than silicon to see what their capabilities are. Since my PhD, I have also done a lot of work in silicon technology in addition to the new semiconductors. But a lot of what I have done in my career stems from the research activities during my graduate research studies. Cornell offers a lot of freedom in choosing whom you work with and the kind of interdisciplinary research you want to engage in.

Manas : The world is moving towards a new era where semiconductors and smart devices are evolving at a rapid rate. What are the future prospects?

Prof. Jayant : To many people, semiconductor technology often means silicon technology, although a lot of other semiconductor materials like gallium arsenide, gallium nitride, indium gallium nitride etc enable wonderful new technologies. As far as silicon technology is concerned, it has been dominated by the so-called Moore's law, which was stated by Gordon Moore back in the 1970s. According to it, the number of transistors on a cutting-edge chip will double every 12-18 months (the exact number of months varies a bit depending on which specific statement of Moore's law you are looking at). This means that the capability and complexity of semiconductor chips increases at an inexorable pace, making the field of semiconductor electronics a very good career option for many.

I expect the field of semiconductor electronics to continue providing exciting new career opportunities and research opportunities well beyond 2035. Also, there is a lot of interest in developing integrated solutions like system-on-chip (SoC) and those can be major drivers of growth in the semiconductor sector. You mentioned smart devices. That is another area where one can expect growth well into the future.

Manas : What message would you like to give students aspiring to pursue higher studies?

Prof. Jayant : One must keep in mind that interdisciplinary research is increasingly becoming the order of the day.

IN CONVERSATION WITH ...
Srijan Paul

Srijan Paul (CSE, 2023 batch) has been placed in DeepSource Pvt. Ltd. with 20 LPA. In this interview with Manas Ranjan Padhy, CEN 7th sem, he talks elaborately about his journey and experience of working for the company.

Manas : Congratulations, Sir on receiving the offer from DeepSource Pvt. Ltd. Securing a position with such an attractive package is no small feat! Could you please share when and how you began preparing for this opportunity?

Srijan : In October 2021, a DeepSource engineer scouted my GitHub profile. There was no specific preparation for this job, but I did spend time exploring my interests in compilers, static analysis, game engines, etc., which eventually led me here.

Manas : Considering it was your final year of engineering studies, you must have faced a demanding schedule with plenty of learning experiences and the hustle of placement activities. Could you shed some light on how you effectively managed your time and enhanced your skills?

Srijan : I spent half my time in class and the other half at work. Thankfully, the attendance mandate is somewhat flexible for 3rd and 4th year students.

Manas : As we know, you have experience with code analysers, linters, and vulnerability scanners. How has this practical experience contributed to your skill set, and how do you see it benefiting your future career?

Srijan : I have experimented with programming languages and type theory in my first and second years. I think it helps build an intuition for the tools a programmer uses on a regular basis.

Manas : Since many of our current students are keen on participating in the practice school program at our institution, could you share your personal experience as a practice school intern at the same company?

Srijan : A student's practice school experience is significantly influenced by the company they choose to work for. For me, it was flawless. I learned a lot and had the opportunity to take ownership of large projects. Of course, this owes more to DeepSource's solid work culture than anything else. I would highly recommend looking for openings in companies with a high bar for their engineering.

Manas : Given your experience and success, do you have any advice for fellow students on balancing academics and extracurricular activities to excel both in interviews and internships?

Srijan : Find a healthy balance between classes and your own personal interests. Sometimes, that will mean having to cut down on attendance. If you can maintain a decent GPA, it should be fine. The purpose of academics is to prepare you for a job.

STUDENTS' CORNER

The Ineluctable Truth of Time

Growing up is a natural part of life. It is inevitable. In fact, when we were young, growing up was all we could think about. Every youngster has fantasized about doing a variety of things when they grow up. However, the reality is very different from our childhood dreams now that we have all grown out of our childhood years and have already stepped into the adult world. It is not as enchanted as it appears. We all occasionally reflect on those earlier times. At some point in our lives, we all must have wanted to go back to those days when all we could do was play with our friends, have our favorite snacks together, and enjoy our lives to the fullest.

The best part of growing up for me was the vacations we used to get in our schools, especially those summer breaks. Everyone had their own plans for spending the summer holidays; some had a full list of things to do, while others had plans to watch Malgudi Days by R.K. Narayan on Doordarshan, visit their grandma, etc. I used to spend my holidays with my grandma. During those summer breaks, my grandmother and I used to go for a walk in the evening. Those evening walks are one of the best memories I could ever have. We would walk to a nearby pond in the chilly breeze after a long, hot afternoon. The water used to be cool, refreshing, and clear. We would sit there for the entire evening, and she would share her stories, experiences and recipes.

Now-a-days, kids grow up far sooner than they should, which has both benefits and drawbacks. There are benefits like knowing the answers to all the questions we used to have, such as why a rainbow appears and what kind of planet we live on. However, they went unanswered for us due to a lack of appropriate channels like internet access. With today's quick internet access, kids may learn a lot about a variety of topics. But every good thing has its bad side, and so with their precocity. They tend to spend less time with their families and friends, get addicted to all the social networking sites, and forget about real life.

With the passage of time, growing up has also evolved. We develop a sense of freedom and responsibility as we get older. For some, growing up means moving from being instructed what to do and how to make decisions to making those decisions on your own and taking the route you believe is best, while for others, it can mean taking up responsibilities at an early age. Either way, it makes us mature and teaches us a way of life.

Pratishya Priyadarshini
3rd Sem ECE

Archived

Alone by the bus, moments pass in a gush,
People engaged, around me, All l could think was flee, Crappled loneliness, Troubled fights with myself, Origins : none,
Could this be gone? Is it insanity?
Or crippled proclivity? Brought upon?
Happening? Don't know, saddening, Raindrops glide,
Winds, guide ameliorate,
Presence : their essence we live on,
Remind, rewind, go on
Cry them,
The bewildered leaves, Sangfroid survival game, Whisper, my hives Heart, archived Archived

Aradhana Dash
3rd Sem CEN

ALUMNUS SPEAKS...

Sumit Kumar Sah
2021 Graduating Batch

In a world driven by technological advancements, the importance of bridging the gap between academia and industry cannot be overstated. Sumit Kumar Sah, an alumnus of 2018-2021 batch and currently a Senior Engineer at HTC Global Services, stands as a shining example of how one can excel in the corporate world while also nurturing the minds of future professionals through mentorship and industrial training.

Sumit's journey began with a Bachelor's degree in Electronics and Communication Engineering from Silicon Institute of Technology in 2021. While many graduates dive headfirst into corporate careers, Sumit's passion for teaching ignited a parallel path. Currently serving as a Senior Engineer at HTC Global Services, he has managed to intertwine his professional life with his love for education.

Throughout his academic and professional voyage, Sumit's passion for imparting knowledge has remained unwavering. During his college years, he took the initiative to train students in a diverse range of technologies including Python, Data Science, AWS Cloud, and Azure Cloud DevOps. These experiences not only showcased his technical acumen but also unveiled his innate ability to simplify complex concepts for learners.

Sumit's desire to bridge the gap between academia and industry led him to co-found Ingenious-Tech World. This platform serves as a conduit for industrial training, primarily conducted during weekends to accommodate the busy schedules of engineering students and professionals. The endeavor not only showcases Sumit's dedication to enhancing practical skills but also his commitment to nurturing the talent

pipeline. One of the platform's milestones was training teachers from DAV schools across Odisha. This initiative, in collaboration with Silicon Institute of Technology, underscores Sumit's aspiration to empower educators and, by extension, students with cutting-edge knowledge in AI, Python, and Data Science.

Sumit identifies the pivotal skills that students must cultivate to secure promising job positions. Technical proficiency in programming languages, data science, cloud computing, and emerging technologies like AI and cybersecurity is indispensable. However, he places equal emphasis on professional skills: communication, problem-solving, teamwork, and adaptability. These skills empower individuals to navigate dynamic work environments and collaborate effectively.

Corrigendum

The article titled Tech 2050: Shaping the Future of Life in the feature 'Educating Us', *SLATE*, 1st issue, was originally written by Sneha Sruti Sahu, 4th sem CSE and not Sandeep Kumar Pradhan, 2nd sem EEE.

Zygon :
– AN EXTRAVAGANZA OF ART & ARTISTES

Zygon, a hallmark event in SiliconTech's annual calendar, is a spectacular celebration of diverse artistic expressions and the talented artistes behind them. This cultural fest goes beyond the classrooms to provide a 'kaleidoscope of experiences' where students bond and rejoice, leaving an indelible mark on their SiliconTech journey.

Derived from a Greek word, the etymological roots of 'Zygon' lie in anatomy and music. The term essentially refers to a significant connection, between symmetrical elements, that represents balance, unity, and harmony. It symbolizes the fusion of different ideas and cultures to create something beautiful and harmonious.

SiliconTech, established in 2001, held its inaugural cultural event in 2002 at Rabindra Mandap. The Cultural and Sports Committee of the institute organized the event. Subsequently, plans were made to host this event within the college premises to enhance a sense of belongingness and community building. In 2004, after inviting suggestions from students, Zygon was chosen as the official title, and the fest found its home on campus. Initially, Zygon was held on a temporary stage until our permanent North Lawn stage was completed in 2008.

Functioning under a student-centric and faculty-driven approach, SiliconTech conducted its first student elections in the academic year 2005-06 resulting in the formation of the Silicon Students' Council (SSC). Since its inception, the SSC has been the driving force behind Zygon, making it a cherished tradition.

The SSC orchestrates diverse cultural events like

'Rhythmnova,' exclusive to Silicon Music Club members, and 'Consonance,' tailor-made for newcomers. Zygon's distinctive charm arises from its inclusive spirit. It unites students across batches and branches in celebration and harmony.

Usually held in early spring, the celebration of Zygon begins in the twilight when the sky is painted with myriad hues of orange, pink, and blue. Music weaves through the air and the youthful spirit dances in every heartbeat. Soulful melodies, lively dance performances, and impromptu JAM sessions make the audience revel in the joy of artistic expression. The signature events of Zygon include captivating ramp walks and enchanting branch dance performances. But as the night deepens, joyous echoes gradually surrender to silent tears, for the truth dawns: college life is nearing its end. Zygon, a bittersweet farewell for every graduating batch, paints a poignant picture.

In our celebration of art and artistes, Zygon rises above diversity, echoing the wisdom of Auguste Rodin, the pioneer of modern sculpture: "To be moved, to love, to hope, to tremble, to live" – these are life's quintessential expressions.

Sweta Mohanty
Assistant Professor, (BSH)

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