UDBHAAS

NEWSLETTER

उद्भास

Volume 1 • Issue 1 • June 2021

Department of Electronics and Communication Engineering
Jaypee Institute of Information Technology, NOIDA
(Deemed to be University under Section 3 of UGC Act 1956)

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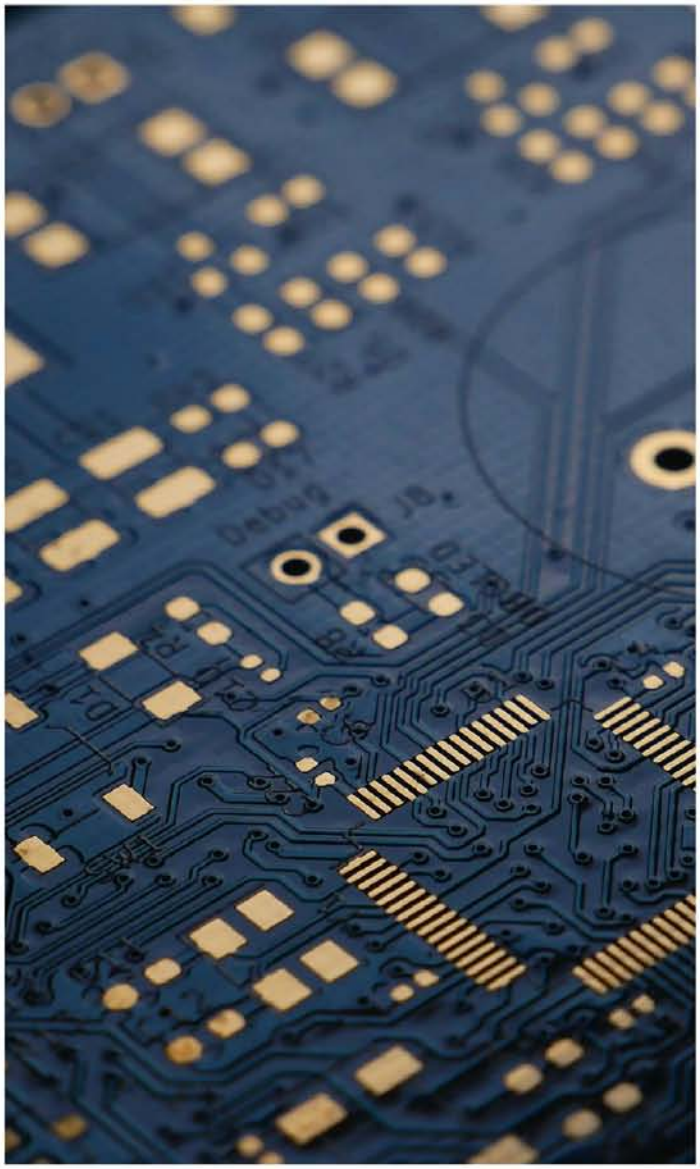


Message from the Vice-Chancellor

Education is not complete if it does not help the individual to stand for oneself and take upon the challenges that one faces at several stages in one's career and life. When we impart education, we empower the individuals to pursue their goals, to realize their dreams, to make the right choices in life and to become a skilled professional in building the future of India. An ideal education should make an individual to respect diverse cultures, human values and professional ethics. The same spirit is exhibited by the Department of Electronics and Communication Engineering (ECE) of Jaypee Institute of Information Technology (JIIT), NOIDA. I would like to congratulate the Department of ECE for presenting the inaugural issue of the newsletter Udbhaas.

In the current world scenario of ever-changing technologies, fast-evolving research innovations and growing economic challenges, an extreme competition is the order of the day. Creating and maintaining an inspiring atmosphere assumes tremendous importance in moulding the young minds to realize their strengths, work upon their inadequacies and build their capabilities. I am reminded of Gurudev Rabindranath Tagore's words, "The higher education is that which does not merely give us information, but makes life in harmony with all existence."

JIIT understands the pulse of students' education demands and stays true to its objective of being a good quality higher education provider. I believe the pages of Udbhaas will present to the readers a list of conferences, workshops, training programs, expert lectures and the industry interactions offered to the students, enriching their learning canvas. Moreover, Udbhaas intends to provide a bird's-eye view of what a student can expect during the graduation years with us at JIIT.

Wishing you all success in your endeavours! Keep learning and keep growing!

With best compliments,
Prof. S. C. Saxena
Vice-Chancellor
Jaypee Institute of Information Technology, NOIDA

Message from the Head of Department

I am extremely pleased to present the inaugural issue of the newsletter, Udbhaas, of the Department of Electronics and Communication Engineering (ECE), Jaypee Institute of Information Technology (JIIT), NOIDA. Udbhaas is for honouring and presenting the commitment of the faculty members and students of the Department of ECE and the department's dedication to the scholarship of education, research, vision and approach in grooming our students to catapult into the fast-paced world with élan. The notion underlining the significance of industry and practice to hone one's knowledge and skills is deeply engraved in every member of the ECE family. This is realized through the multiple international conferences, training workshops, seminars, faculty development programs and expert lectures organized in the institute campus periodically. Our faculty members' dedicated efforts have culminated in several high-quality peer-reviewed research publications in international journals and conferences. This time, owing to the pandemic, everything being online, we are proud that the department has conducted various activities very successfully.

It is very true to say that education gives insight into the realms of science and society that one starts visualizing opportunities in seemingly closed spaces, and our alumni turned entrepreneurs are an attestation to this fact.

When the environment is so dynamic, it is important to channelize the energy of students in a positive direction. The best way to achieve this is to keep them positively engaged. The student hubs instil the concept and conduct many events in the technical and techno-cultural spirit in the campus encouraging an all-rounded development of our students. The hub pages are a fun-filled, colourful and energetic walk through our culture and activities.

My heartfelt congratulations to the entire department on the publication of the inaugural edition of the much-awaited departmental newsletter. I trust that the editorial efforts for putting together various facets of the Department of ECE in this issue of Udbhaas will meet the reader's expectations.

With best wishes,
Prof. Shweta Srivastava
Head of Department
Electronics and Communication Engineering

Message from the Editorial Team

It is a moment of immense pleasure to present the first edition of Udbhaas, the newsletter of the Department of Electronics and Communication Engineering (ECE). This newsletter aims to be the official voice of the Department of ECE to the world, and it shall be a platform where the department comes alive with the latest happenings and creativities.

The road to success is not easy to navigate, but with hard work, drive and passion, it is certainly possible to achieve the toughest goals. We would constantly strive to bring out all such achievements and the inner workings of the Department of ECE, which often go unnoticed, on the pages of Udbhaas as a small token of pride and encouragement for every deserving member of our department. With the continuous enthusiasm and dedication of the editorial team, we trust that our efforts in creating and publishing the inaugural issue of Udbhaas are fruitful.

Hope you all keep safe and healthy during the difficult times of the COVID-19 pandemic.

सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः।
सर्वे भद्राणि पश्यन्तु मा कश्चिद् दुःख भाग्भवेत्॥

Yours sincerely,
Editorial Team

Vision and Mission
Jaypee Institute of Information Technology

VISION

To become a centre of excellence in the field of information technology and related emerging areas of education, training and research comparable to the best in the world for producing professionals who shall be leaders in innovation, entrepreneurship, creativity and management.

MISSION

Mission 1: To develop as a benchmark university in emerging technologies.

Mission 2: To provide state-of-the-art teaching learning process and R&D environment.

Mission 3: To harness human capital for sustainable competitive edge and social relevance.

Vision and Mission
Department of Electronics and Communication Engineering

VISION

To be a centre of excellence in education, training and research in Electronics and Communication Engineering to cultivate technically competent professionals for industry, academia and society.

MISSION

Mission 1: To impart education through contemporary, futuristic and flexible curricula with innovative teaching and learning methods and hands on training with well-equipped labs.

Mission 2: To carry out cutting edge research in different areas of Electronics and Communication Engineering.

Mission 3: To inculcate technical and entrepreneurial skills in professionals to provide socially relevant and sustainable solutions.

Programme Educational Objectives (PEOs)

Programme Name: B. Tech. in Electronics and Communication Engineering

PEO1: To provide a strong foundation in Electronics and Communication Engineering to pursue professional career, entrepreneurship and higher studies.
PEO2: To evolve capability to analyse, design and develop feasible solutions to real world problems.
PEO3: To inculcate professional ethics, managerial and communication skills to develop ingenious solutions for the benefit of society and environment.

Programme Name: M. Tech. in Electronics and Communication Engineering

PEO1: To provide profound knowledge of modern design tools to solve real-life problems in the field of Electronics and Communication Engineering.
PEO2: To inculcate research skills with ethical attributes for academia and industry.
PEO3: To develop entrepreneurial skills as per industry requirements for providing sustainable solutions to the society.

Workshops/Webinars/Contests Organized by the Faculty Members (January-May 2021)

S.No.	Organizer	Event Name	Speaker	Date
1	Mr. Abhay Kumar	Webinar on "The Role of Teachers, Today"	Dr. Sanjay Kumar, Department of Electronics and Communication Engineering, Birla Institute of Technology Mesra, Ranchi	1 February 2021
2	Dr. Shruti Kalra	LPKF ProtoMat E44 PCB Machine Demo	Mr. Srimanta Mana and Mr. Gaurav Piplani, Excel Technologies	1-4 March 2021
3	Dr. Ruby Beniwal	Logo Design Competition for Jaypee Innovation and Incubation Center	-	1-10 March 2021
4	Dr. Shruti Kalra	Webinar on Women's Day on "Antenna and Wave Propagation"	Prof. Shweta Srivastava, Department of Electronics and Communication Engineering, JIIT, NOIDA	8 March 2021
5	Dr. Abhishek Kashyap, Dr. Ajay Kumar	Webinar on "Satellite Communication Technologies"	Dr. R. K. Singh, Former Engineer-in-Chief, Doordarshan	23 March and 26 March 2021
6	Dr. Bhartendu Chaturvedi, Dr. Jitendra Mohan, Mr. Abhay Kumar	Workshop entitled "Training on State-of-the-art Digital and Analog IC Design using Cadence EDA Tool"	Mr. Nitten Kumar, Application Engineer, Entuple Technologies	24-25 March 2021
7	Dr. Garima Kapur	How to Plan Startup and Ethical and Legal Steps	Mr. Sumeet Kapur, Founder and CEO, Wellcure.com	2 April 2021
8	Dr. Jasmine Saini	Webinar on "Teaching Learning Process and Effective Online Teaching"	Dr. U. S. Sahu, Associate Professor, NITTTR Hyderabad	15 April 2021
9	Dr. Shamim Akhter, Dr. Satyendra Kumar, Mr. Shivaji Tyagi	Alumni Connect - Webinars on "Go for an Electronics Job", "Coding Languages used in Electronics and Comparison with Computer Science", "Introduction to Basic VLSI Flow and VLSI Domain", "Exploring Industries", "How to Prepare for VLSI Jobs"	Mr. Umang Garg (2018 Batch), Mr. Vinayak Tripathi (2018 Batch), Mr. Gaurang Goyal (2017 Batch), Mr. Abhishek Kaul (2019 Batch), Mr. Naresh Goel (Batch 2016)	2 May, 9 May and 16 May 2021
10	Dr. Jasmine Saini	Webinar on "Smart Antenna for 4G Cellular Network"	Prof. J. S. Roy, School of Electronics Engineering, KIIT University, Bhubaneswar, Odisha	18 May 2021

Publications by the Faculty Members (January-May 2021)

International Journals

1. R. K. Singh and A. Gupta, “A wrenched-square shaped polarization independent and wide angle stable ultra-thin metamaterial absorber for S-band, X-band and Ku-band applications,” AEU - International Journal of Electronics and Communications, vol. 132, 153648, April 2021.
2. N. Agrawal, A. Kumar, B. Kuldeep et al., “Weighted least square design technique for Hilbert transformer using fractional derivative,” Signal, Image and Video Processing, 2021. https://doi.org/10.1007/s11760-021-01878-6
3. P. Arora and M. Hanmandlu, “Detection of defects in fabrics using information set features in comparison with deep learning approaches,” The Journal of The Textile Institute, 2021. DOI: 10.1080/00405000.2020.1870326
4. K. Nigam, P. N. Kondekar et al., “Performance and analysis of stack junctionless tunnel field effect transistor,” Silicon, 2021. https://doi.org/10.1007/s12633-021-00958-z
5. S. Kumar, K. Nigam, S. Chaturvedi, A. I. Khan, and A. Jain, “Performance Improvement of double-gate TFET using metal strip technique,” Silicon, 2021. https://doi.org/10.1007/s12633-021-00982-z
6. N. Gupta and A. Kumar, “Numerical assessment of high-k spacer on symmetric S/D underlap GAA junctionless accumulation mode silicon nanowire MOSFET for RFIC design,” Applied Physics A, vol. 127, 2021.
7. A. Kumar and U. Gupta, “Numerical assessment of high-efficiency lead-free perovskite solar cells,” Materialstoday: Proceeding, vol. 45, part 6, pp. 5041-5046, 2021.
8. A. Kumar, S. D. Saurabh, and H. Sharma, “Perovskite-CIGS materials based tandem solar cell with an increased efficiency of 27.5%,” Materialstoday: Proceeding, vol. 45, part 6, pp. 5047-5051, 2021.
9. B. Bansal, “A new UTD based time-domain solution for UWB diffraction in 3-D environments,” Wireless Personal Communications, 2021. https://doi.org/10.1007/s11277-021-08130-x
10. A. Kumar and S. Srivastava, “Four element three-dimensional SIW horn antenna array for high-frequency applications,” International Journal of RF and Microwave Computer-Aided Engineering, vol. 31, no. 6, 2021. https://doi.org/10.1002/mmce.22660

11. R. K. Singh and A. Gupta, “An asymmetric meandered line based dual-band ENG-TL antenna loaded with complementary closed ring resonators for gain enhancement,” IETE Journal of Research, pp. 1-11, April 2021. DOI: 10.1080/03772063.2021.1914202
12. S. Kumari, V. R. Gupta, and S. Srivastava, “Folded substrate integrated waveguide based multiband filter for Wi-Fi6E application,” Wireless Personal Communications, March 2021. DOI: 10.1007/s11277-021-08297-3
13. A. Goel, A. Upadhya, and V. K. Dwivedi, “Diversity aided millimeter-wave/free space optical cooperative relaying systems,” International Journal of Communication Systems, 2021. https://doi.org/10.1002/dac.4700
14. A. Goel and M. S. Narula, “De-anonymization of electronic mail,” International Research Journal of Engineering and Technology, vol. 8, May 2021.
15. S. Kumar, “Temperature dependence of analogue/RF performance, linearity and harmonic distortion for dual-material gate-oxide-stack double-gate TFET,” IET Circuits, Devices & Systems, 2021. https://doi.org/10.1049/cds2.12049

International Conferences

1. S. Sahu, M. M. Tripathi, and A. Kumar, “Numerical simulation of GaN-BTG MOSFET for suppression of SCEs,” 3rd International Conference on Devices for Integrated Circuits (DevIC), Kalyani Government Engineering College, 19-20 May 2021.
2. S. Sahu, M. M. Tripathi, and A. Kumar, “Performance investigation of nanoscaled GaN-BTG MOSFET for analog/linearity and low power applications, ICTE Sponsored 2021 IEEE International Conference on Nanoelectronics, Nanophotonics, Nanomaterials, Nanobioscience & Nanotechnology (5NANO), Mangalam College of Engineering, Kerala, 29-30 April 2021.
3. K. S. Singh, S. Kumar, and K. Nigam, “Vertical tunneling based dual-material double-gate TFET,” 2021 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS), February 2021, pp. 900-904.

Book Chapter

S. Kumari, V. R. Gupta, and S. Srivastava, “Propagation characteristics of SIW and waveguide: A comparison,” In book: Nanoelectronics, Circuits and Communication Systems, vol. 692, January 2021. https://doi.org/10.1007/978-981-15-7486-3_50

Hubs at a Glance

Institute of Electrical and Electronics Engineers (IEEE) Student Branch

IEEE Student Branch at JIIT is run by the B. Tech. students of different branches. It was founded in 2008 with a goal to give opportunities to the students to learn in the technical fields from the fellow students within the JIIT campus and outside.

Creativity and Innovation Cell in Electronics (CICE)

"No Resistance Can Drop Our Potential"

CICE was formed with a sole purpose of developing the interest of students in electronics and to encourage and help them to materialize their ideas. The club has organized different workshops on different topics of general and specific interest keeping in mind the need of students at large. The club keeps an eye on the latest developments in the world of electronics and does its best for the learning of the students.

Microcontroller Based Systems and Robotics Hub μ_{CR}

The hub has a team of skilled students from all years. The students prove their worth, not just by talking, but by winning all sorts of robotics competitions held in many institutes throughout the country. The hub is based on a very simple concept of learning by teaching - all senior students who specialize in their respective fields take classes for the first- and second-year students on a regular basis, who in turn will teach their juniors in the future. The hub is well-versed in manual as well as autonomous robotics, and it seeks growth every day.

Recent Achievements of Alumni

Dr. Ayush Bhandari who did B.Tech. in ECE from JIIT and subsequently Ph.D. from MIT, USA and Joined Imperial College London as a faculty member has received a prestigious IEEE award for his Ph.D. work: IEEE 2020 Best PhD Dissertation Award.

Ms. Shreya K. Chari (2013-2017 ECE batch) has received the prestigious Marie-Curie Fellowship and is working as a researcher at the Universitat Politecnica de Catalunya (UPC), Europe. She obtained her master's degree from KTH.

Alumni Speak

In Conversation with Ms. Ria Rustagi
Co-Founder and COO, Neuphony

Education:
Technical University of Munich-Nanyang Technological University
M.Sc., Integrated Circuit Design
2015-2017

Jaypee Institute of Information Technology
B.Tech., Electronics and Communication Engineering
2011-2015

Profile: linkedin.com/in/ria-rustagi
Email: ria.rustagi@pankhtech.eu

What are your views on CGPA (recommended CGPA and remedial for bad CGPA)?

I do not think that I am the right person to answer this question as I have always been a very grade centric and a high scoring student but at the same time, I could be spotted in all fests and college activities. Once my CGPA dropped to 7.1 in the second year, it was then I decided that this needs to be rectified. I started focusing on my studies and improved gradually and I scored a 9+ CGPA in my last year. So I believe that there is nothing like a bad CGPA and you can always improve upon yourself. But I would recommend you to always maintain your CGPA 7+.

What factors matter the most to get admission to a foreign university for a master's programme?

Your CGPA helps you to get into the university but the foreign universities do not focus on just grades. They judge you on your overall personality, they see your projects, subject expertise, hobbies, co-curricular activities and the human side of you. In addition, you should write your true story in the statement of purpose and not what you think they would like to hear. In my case, I literally wrote that my father forced me to become an engineer and electronics was trending at that time. Eventually, I love what I do. They like your consistency and hard work and it is all that matters in the end.

In what ways a master's degree is useful if a person wants to do a job in core ECE? Do you recommend an undergraduate student to go for a job right after graduation or to obtain a master's degree first instead?

It solely depends on you. You can go for a master's programme or you may start your career right after your B.Tech. degree. I would recommend you to choose it based on your interest and your thirst for knowledge. Going for a master's degree is a personal choice.

What is the level of expertise in coding required in the ECE field? And is coding important?

It is not necessary but yes, it helps you a lot. You can learn to code in several languages, but the logic that is involved remains the same and logic building is important for all engineers. I would recommend that those who do not like coding and wish to make a career in the core ECE should explore the VLSI field. It requires minimal coding and Verilog is the easiest language you will ever come across.

Are college studies sufficient? How did the JIIT curriculum prepare you for your career?

To an extent, yes, college studies are sufficient for knowing and strengthening the fundamentals. When I went for my master's programme, I never felt that anything was being taught out of sync because we had been taught all those basics in JIIT. Having said that, the fundamentals are not sufficient, you need to complement the studies with hands on experience which you can get via internships. These internships will give you practical knowledge as well as insights and a different perspective, which is very important for your overall personality development.

As per your experience, what are some attributes of individuals who are most successful in the ECE jobs?

I think it is consistency and patience. Also good decision-making. It is not that the electronics industry does not have jobs for freshers. There are so many companies apart from the big ones that hire the ECE graduates and there is mass recruitment in Bangalore too. You should not rush through the process, upskill yourself and keep your goals and priorities clear in mind. You cannot run after money initially and you need to scale yourself up through consistent hard work. This does need a lot of patience and the people who have it succeed.

What is the importance of networking and how can one take the leverage of LinkedIn for getting a job?

Somebody gave me a piece of very good advice when I was looking for my master's admission - to go to LinkedIn and type in your dream job. Let us suppose your dream job is in the VLSI field, so you find the top 10 companies in VLSI that work in India. Send a connection request to all those people who are visible when you type in that job profile and are from those top 10 companies. Connect with the managers and recruiters and try to learn from their experience.

What can be the advantages of a good profile and active network?

You should have a good profile and strong connections, utilize your LinkedIn like you utilize your Facebook and Instagram. Your LinkedIn profile should be your social media presence and you should post regularly. Start simple discussions. Make a new learning or a new project a new LinkedIn post and I cannot tell you in words how immensely this is going to help you in the long run. When you have this, you will receive internship and job invitations from the recruiters themselves. Just try to be out there and learn.

What did you think of JIIT after six years of passing out and what are your best and worst memories?

I made very good, in fact, the best friendships at JIIT. I can recall so many best memories. I remember sitting at A to Z and enjoying myself with friends. The entire college life I must say is the best part of my life. I always cherish those memories and they bring me tears of joy. The moment you pass out of college is the day following which you will only remember the good memories. The worst things are momentary and good things stick to you forever.

What is your message for the readers of Udbhaas?

Just enjoy your college life to the fullest. Those are the golden days and do whatever you like, build your network, learn, experiment, mess up, fail - it is fine, compete with yourself, evolve, enjoy the fests and participate in every activity but do not let anyone stop you from your goal because as long as you are learning and growing, it is perfect. This is your journey and you, dear readers, are the hero of your story.

Penned by the Faculty Members

Urbanization and Sanitation

India is a fast-urbanizing nation. The total urban population is 31.16% of the total population. The urban population is expected to increase to 60 crore by 2030. While urbanization and its impact on culture, education, and economy have always been stressed in India. The same is not true for sanitation until recently. As a result, the sprawling towns and cities brought with them innumerable issues like soil, air pollution, and resultant diseases. The lack of planning with sanitation in mind also created a huge problem while observing social distancing during the ongoing pandemic.

Swachh Bharat Mission (Urban) seeks to not only provide toilets, promote waste management, and enhance the sewage treatment system, it also intends to change people's mindset. As per the latest survey, 99% of the Indian cities under urban local bodies have become open defecation free. However, the survey of the urban bodies could not be done in West Bengal due to the pandemic.

Even corporate bodies have started to participate to make our cities open defecation free. Suvidha, the community hygiene center by HUL and HSBC, helps in bringing hygiene and sanitation to urban communities. The Suvidha centers in Mumbai impact over 12000 lives and save 21 million+ liters of water.

Thus, the need of the hour for citizens is to devote both time and material in sanitation to reduce the cost of health by minimizing the scope for diseases and aid the nation in fulfilling the objective of Swachh Bharat.

Dr. Prabhakar Jha

To the Inevitable End of Moore's Law - What Next ?

Our capacity to miniaturize components has helped us to double the transistor density on a silicon chip every two years. Moore's law has caused computers to become increasingly affordable and better for decades. We have reached the limits of miniaturization, and hence, the efficiency is decelerating. If computers two decades ago would have a thousand-fold less computing capacity, making smartphones, Alexa, and movie streaming would not have been possible. How could we implement new ideas in the upcoming twenty years if we cannot speed up computation now?

Researchers are unsure about what to do next. Maybe future technologies like quantum computing and carbon nanotubes can help. But such options are still undetermined, which may take more years to determine. It would be impractical to assume a full reinvention of the computational engine. Code optimization has been taken care of for years, thanks to Moore's law. The programmers used shortcuts in order to ensure that the machines could write the code as easily as possible. For example, many developers employ recursion: solving problem B with the code of problem A, which could be inefficient. There is an inordinate degree of inefficiency. Inefficiencies will multiply. Reducing the number of layers of a computer code by a factor of 2 would slash it by 80% yields on an average program performance drop of 100x.

This is no mere theory. Faster advancement in computing power-hungry fields like machine learning, robotics, and virtual reality would be important to fully use these innovations. We need to make certain improvements. Another idea is to parallelize the code: complex functions can be performed more quickly and more cheaply using strategies like parallel processing. Thus, the slowdown of Moore's law does not signal the end of our laptop. However, to see significant advances in artificial intelligence and robotics, we have to invest more time in program architecture.

Dr. Shruti Kalra

देश के सैनिकों के प्रति सम्मान

देश की कमान लिए
देश का ईमान लिए
चलता निरन्तर पथ पर
देश की आन बान शान लिए |
न मरने का भय
न दुश्मन को मारने में संशय
चलता रहे निरन्तर वो
तिरंगे की शान लिए ||

डॉ. कुलदीप बड़ेरिया

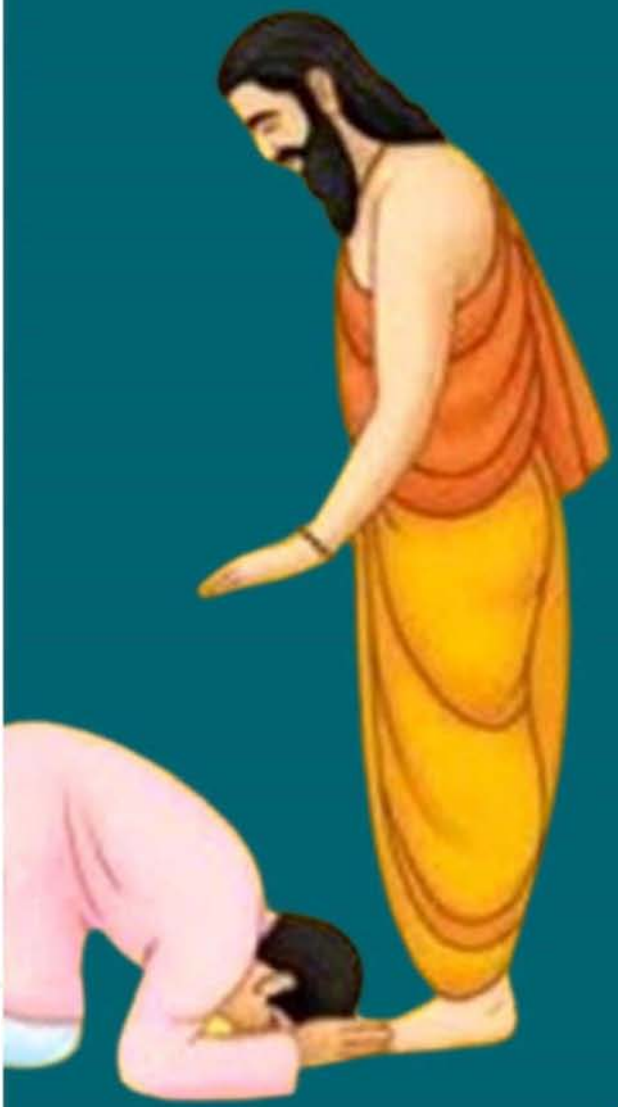
मेरे तो गुरु ब्रह्म तुम ही: एक भेंट

कुछ है मुझमें तुझ सा तेरा ही अवयव
क्या भेंट करूँ तुझे सब तेरा ही वैभव
तुझको पाया है खुद में, ढूँढ़ा जब भी खुद को तुझ में
तू मुझ में, मैं तुझ में अविचल, तुझ से तेरा बालक जग में |

संपूर्ण इकाई सोचा जब खुद को
एक इकाई जग में पाया खुद को
तू शून्य है संपूर्ण इकाई
दशमलव अंश पाया खुद को |

चंचलता और व्याकुलता की, लहरों में लहराता ये मन
मृग कस्तूरी सा अधीर, लक्ष्य ढूँढ़ता था ये जीवन
कच्ची मिट्टी सा मुझे उठाकर, ज्ञान नहीं आकार दिया
क्या भेंट करूँ तुमको अर्पण, मेरा तो आधार तुम ही
जीवन का ब्रह्माण्ड संभाले, मेरे तो गुरु ब्रह्म तुम ही
शिक्षा का आरम्भ तुम ही, दीक्षा का प्रारम्भ तुम ही ||

डॉ. अर्चना पाण्डेय



Penned by the Students

Drones in Blood Delivery

There is a need for a device that delivers blood packs during an emergency situation at times of flood in areas where there is heavy traffic and to the tribal villages where medical camps have been set up as vehicles take more time in reaching the spot. Hence the hexacopters can be used for this purpose. It is a six-propeller device that carries a camera and features four leg shaped skis. These skis allow the device to be stable when it lands. It has more lifting power than quadcopters and reaches higher altitudes. The main advantage is that it keeps flying even if one propeller blade fails, by placing the propeller blades powering the motor 120 degrees apart. If any problem occurs they can be controlled by the pilot by using the transmitter and can be operated in dual mode. The weight of the drone is 700 grams and the payload weight is 5600 grams with a speed of 21 m/s (approx.). It is more cost-efficient than drones using wings.

By means of INAV and N8N flight controller GPS module is fixed which makes the copter reach its destination and return back to the source automatically. An ultrasonic sensor is used for obstacle detection. Blood packets are safely placed in a box and they are scanned to find the blood groups of the packet delivered and a scan code is provided by the pilot to check whether the blood packet has been taken by the person in need. Hence there is safe landing and delivery of other critical medicines on time.

Altimeters, accelerometers, gyro meters are used to maintain altitude and fly in the direction of the wind. The flight time is 15-30 minutes depending on the cargo and vertical take-off and landing are used for safe delivery.

Vaishali Sharma
Ph.D. Programme, First Year

Zen kōans: Inexplicable Enigmas to Disintegrate Conscious Logic

Consider this "not" so logical puzzle; Two Buddhist monks Ekido and Tanzan walk down a muddy road, ahead in their path they meet a pulchritudinous female traveller, who is unable to wade a muddy road. Tanzan offers help by carrying the woman on his back and going across the muddy road. Tanzan waved to the woman to say goodbye. Ekido was gobsmacked, as in unison with the monastic lawMonks were forbidden from even approaching women, let alone touching a pretty stranger. Ekido could no longer contain himself , after hours of traveling he exclaimed " how did you carry the woman? even though you know it's against Buddhist law?". As calm as he can be Tanzan or the woman carrier repartered, "I left the carrier there, are you still carrying her?". Now, who broke the law?

Like many kōans, the above mentioned kōan also had numerous interpretations. But the question is what are kōans? The Existence of these kōans links back to the 6th century B.C, in China where there was a severe tussle amongst the 'learned' all over the world. Each one pondering about " How to answer the Un-answered " or more precisely 'is there a way to Explain the Unexplainable?' This logical dilemma has been the base of many scientific breakthroughs, mythological lore and religious practices. But in the midst of the argument, one group of zen Buddhists dared to ask a different question: "Why do we need an explanation?"

Unraveling the secrets of the cosmos and mindlessly pursuing answers was a propensity to be conquered for monks seeking enlightenment, but learning to embrace the mysteries of existence was the true path to enlightenment.To ease this process they were given a total of 1700 bewildering and ambiguous philosophical paradoxes & thought experiments which came to be known as 'KŌANS".

KŌAN as referred to or translated means "CASE-STUDY" and is pronounced as "GONG-AN" in the Chinese language. But unlike real-life problems or court cases "Kōans" were intentionally Incomprehensible. They were mastered by the pioneers and designed to be Bam-Boozing, Surreal and frequently contradicted themselves.

Each kōan contained a lesson based on one of the zen Buddhist monastic codes, such as living without physical and mental attachments, avoiding binary thinking and coming close to true buddha essence (similar to moral of tot stories). For the common man who believes himself to be an overthinker the aim of these short logical anomalies is to divert the consciousness, and challenge the limitations of the human perception, until the brain gets exhausted enough that either the brain stops or refrains from over-thinking. The perfect way to make use of each Kōan is suggested in either one or two ways, one of which is, that all the possible scenarios or outcomes must be pondered upon and suitably eliminated to reach the final solution, but here is the catch: there are infinitely many possible scenarios. The second way is to "cogitate" how the kōan plays a role in your personal life.

However, presenting these lessons as "illogical" anecdotes turns them into tests for monks, teaching them how to live in peace with ambiguity and paradox. With the help of these kōans, monks could internalize Buddhist teaching. The soul of Koans was the grey region between "THE LETTER OF THE LAW & SPIRIT OF THE LAW." Ekido disobeyed the law by psychologically clinging to the woman, but not carrying her physically, as mentioned in the koan before.

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Top Five Productivity Tools for Students

These top productivity tools are for you if:

1. You complain of a lack of free time to read, exercise or care for yourself.
2. You pretend to work, but it's busy work that's not relevant to your goals.
3. You struggle to pick high impact work on your to-do list.
4. You suffer from distractions that hinder your focus.

Productivity apps can help us organize better, make us aware we are running late on deadlines as well as help us fulfil our tasks more efficiently.

Forest : In these modern times, when we're continuously on our cellphones, it is getting harder to focus. No matter how much we try to keep our eyes on the book, it seems like the hand automatically reaches for the phone with no conscious effort. We all know that we easily get distracted while checking out our social media and that five minutes often become half an hour. Apps like Forest allow students to block their phones while they are studying or working on an important project. The point with this app is that you take your time to plant a tree.
And while the tree is growing you cannot do anything else on your phone. Otherwise, you'll kill the tree, which is not very good for your potential forest. If you succeed in staying away from your phone, you'll be rewarded with coins and continue growing your forest. It is an interesting concept that can work great for studying and your overall productivity. Removing the cellphones as the biggest enemies of our focus allows us to become more concentrated and complete our tasks much faster.

PomoDoneApp : We've all been victims of our excitement and determination to study for several hours in a row, without taking breaks. And this usually ends up with finding it impossible to stay focused, continue studying and achieve desired results. With the Pomodoro technique, these problems can be overcome. The Pomodoro technique implies that you study for 25 minutes and then take a 5 minutes break and after four pomodoros, you take thirty minutes break to freshen up, clear your mind and be able to continue studying. It is very effective for obtaining concentration and preventing burnouts.

The Pomodoro concept was an inspiration for PomoDoneApp. It is not just a timer but a workplace where you can integrate all your task-management apps and organize your work the best way for you. With this app, you can understand better how much time you need for different tasks and organize yourself accordingly in the future.

Google Calendar : Another productivity app that works great for students is Google Calendar, especially in these uncertain times during pandemic. Most of the students were forced to switch to online classes and this will likely stay the trend, even when everything passes. Better have Google Calendar, where you can insert your daily schedule, get meetings notifications and much more. You can integrate it with Google Drive, Outlook, and other apps to better meet organization. Learning how to use Google Calendar and getting used to it in student days will help you be much more organized in the future when you start working.

Evernote/ Google Keep : One of the essential skills of every student is knowing how to write to-do lists. If you don't like writing down to-do lists on paper, you can try using the Evernote app/Google Keep to write your notes online. You can use it to manage your tasks and organize better to achieve more. If you're not that into writing, you can insert different pictures, drawing, audio files, and others.
Evernote app is very customizable, and you can use it the way it suits you. Studying and fulfilling students' tasks become much simpler with a good productivity app.

Notion : A cool, modernly designed productivity app that is very easy and fun to use. In the 21st century, it is all about aesthetics, and Notion keeps up with the latest trends. You can use it to write your notes and to-do lists, organize yourself, as well as keep on track with group projects. It is not that easy to fulfil group project requirements during quarantine days but Notion makes it simpler. You can keep an eye on everything that is going on in your team and communicate much easier. Another good thing is that you can make your mood board and be creative while studying if that is what you like. Notion combines all important tasks into one workspace. It allows you to create the perfect working space that suits your needs and boost your organisational skills and overall productivity.

Conclusion

We could say it was never easier and never harder to be a student than in 2021. The bad side is that we, as students, are continuously bombarded with so much information, from every side. On the other hand, the internet era brought so many amazing productivity apps that allow us to organize much better, make virtual to-do lists and keep in touch with our colleagues. Some apps offer the option to combine task-management and productivity apps into one workspace and have everything you need for successful studying in one place. Sometimes the biggest productivity booster is blocking our cellphones and focusing on the real work in front of us, hence finding the app that suits you and making it work.

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