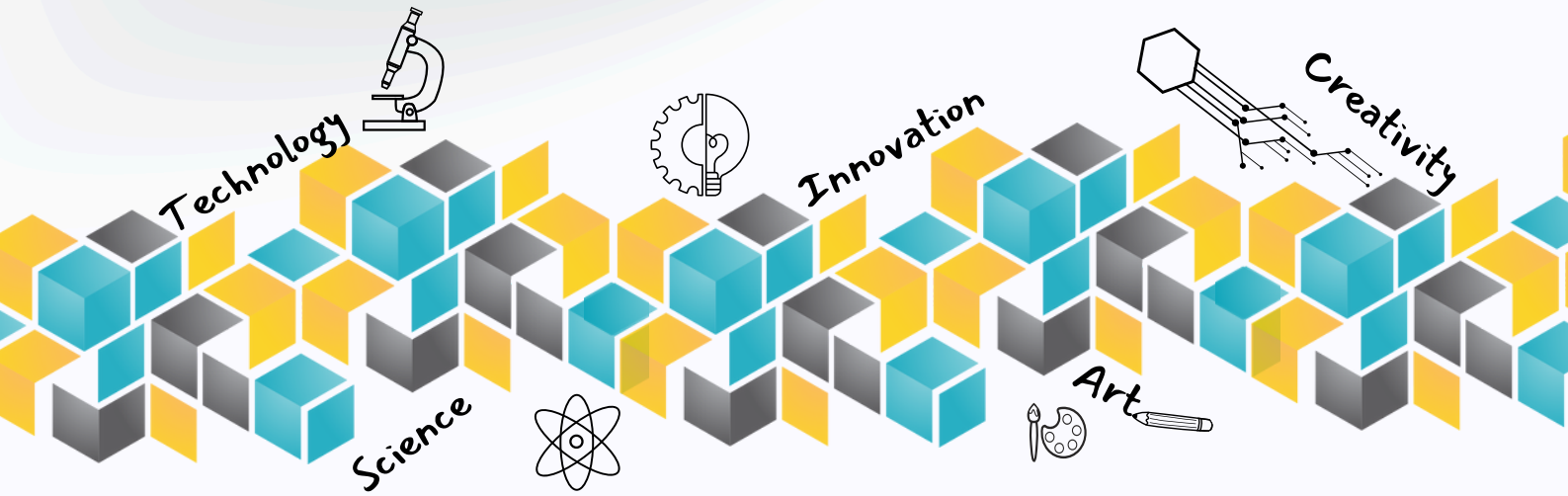
DEPARTMENTAL MAGAZINE OF

Information Technology - CSE (IOT) - CSE (IOTCSBT)

HARMONY

2nd Edition

2023-2024



Contents

Director's Note

Prof. Dr. Satyajit Chakrabarti
Director of IEM

Dear Readers,

Welcome to the second issue of Harmony! As the director of this institution, it is with immense joy that I present to you this edition, brimming with inspiring stories, thought-provoking articles, and stunning visuals. Our team has dedicated countless hours of creativity and hard work to curate a magazine that resonates with our diverse readership. Each page is a testament to our commitment to providing you with quality content that informs, entertains, and enriches your lives.

In this issue, we explore a myriad of topics that mirror the ever-evolving world we inhabit. From insightful interviews with notable personalities to in-depth features on current events, our goal is to illuminate the multifaceted tapestry of human experiences. As you turn the pages, you will encounter stories of triumph, innovation, and resilience, captured by our talented writers and photographers who have crafted moments that evoke emotion and foster connection.

We also strive to lead in cultural, technological, and environmental advancements. Within these pages, you will discover the latest trends, breakthroughs, and initiatives shaping our world. We believe in the power of unity and inclusivity, celebrating diversity and cherishing the uniqueness of every individual. Together, we embrace the notion that our differences make us stronger as a global community.

As we continue to grow and evolve, we remain steadfast in our values of integrity, transparency, and journalistic excellence. We invite you to engage with us, share your thoughts, and be an integral part of our journey. Thank you, dear readers, for your unwavering support. Your passion fuels our dedication, and together, we will continue to create a magazine that stands the test of time.

Wishing you an enjoyable and enlightening read!

Message from the Department

Prof. Dr. Moutushi Singh
Head of the Department of
IT, CSE(IOT) and CSE(IOTCSBT)

It gives me immense pride and pleasure to introduce the Department of Information Technology, Computer Science and Engineering(IOT) and Computer Science and Engineering(IOTCSBT). Our bachelor degree programs have earned accreditation from the National Board of Accreditation (NBA), New Delhi. We regularly review and update all academic programs to reflect the latest advancements in the information technology-driven society. Our strong academic programs, grounded in both theoretical and practical knowledge, align well with industry needs and demands.

I am delighted to welcome you to the second edition of our departmental magazine. This publication marks a significant achievement for our department and showcases the dedication and hard work of our faculty and students. Our department has consistently led the way in technological innovation, and this magazine is a testament to that commitment.

I extend my heartfelt congratulations to everyone who contributed to the creation of this magazine. Their dedication and hard work have made this publication possible, and I am proud to see their efforts realized. I look forward to watching this magazine evolve and continue to highlight the outstanding work within our department.

Editors' Note

Welcome to the second edition of the Departmental Magazine for the department of Information Technology, Computer Science and Engineering (IOT), and Computer Science and Engineering (IOTCSBT). As the editorial team, we are excited to present the remarkable work of our faculty and students.

Our aim is to foster a platform that promotes critical thinking, creativity, and innovation. We believe this publication not only mirrors the academic and cultural diversity of our institution but also highlights our dedication to delivering a comprehensive education to our students.

We extend our heartfelt gratitude to all the contributors who have diligently worked to bring this edition to life. The creativity and commitment demonstrated by our students and faculty are truly commendable.

We hope you find as much enjoyment in reading this magazine as we did in creating it. We are eager to continue delivering engaging and thought-provoking content in future editions. Thank you for your ongoing support and encouragement.

Prof. Dr. Susovan Jana
Deparment of CSE(IOT)

Prof. Dr. Avipsita Chatterjee
Department of IT

Prof. Dr. Koushik Dutta
Department of IT

Editorial Team

Editors

Prof. Dr. Susovan Jana
Deparment of CSE(IOT)

Prof. Dr. Avipsita Chatterjee
Department of IT

Prof. Dr. Koushik Dutta
Department of IT

Student Leads

Nabarun Ray
3rd Year
CSE(IOTCSBT)

Dipra Guchait
3rd Year
CSE(IOTCSBT)

Student Members

Mayank Singh
CSE(IOT)-3rd year

Mohini Ghosh
IT- 2nd year

Sanskriti Bhattacharya
CSE(IOT)- 2nd year

Subhadip Paul
CSE(IOT)- 2nd year

Teachers' Note

Prof. Dr. Soumyendu Sekhar Bandyopadhyay
Department of IT

Dear student, having the opportunity to share my thoughts with my students and colleagues through the departmental magazine, "Harmony," is a tremendous privilege. Your dedication and hard work in "Harmony" are greatly appreciated, and I want to express my gratitude to each and every one of you. A period of growth and exploration, college is, take use of the opportunities that are here, live life to the fullest, and let this be an inspiration to all of you. Learning entails more than just cramming for exams and retaining facts. Essential aims include developing critical thinking skills, enhancing communication, and increasing self-awareness. You have my deepest gratitude for everything you have done, and I can't wait to see what the future holds for you. ---Dr. Soumyendu Sekhar Bandyopadhyay

I am excited to share my thoughts on the second edition of "Harmony," a lively and enriching departmental magazine that highlights the exceptional talent and creativity within our community. The editorial team's dedication and hard work shine through on every page. Their meticulous attention to detail and commitment to excellence are truly impressive.

Prof. Dr. Rupayan Das
Department of IT

Prof. Subhabrata Sengupta
Department of IT

It is an honor to contribute to this edition of HARMONY, our esteemed departmental magazine. As I reflect on my journey as an educator, I am reminded of the profound impact that a cohesive and collaborative academic environment can have on both teachers and students.

Our department's commitment to excellence is evident in the various initiatives and programs we have undertaken. From innovative research projects to community outreach, we are dedicated to making a difference both within and beyond our academic walls. It is through these collective efforts that we forge a path toward a brighter future, one where education serves as the cornerstone of progress and innovation.

I would like to extend my heartfelt gratitude to my colleagues, whose unwavering support and collaboration have been instrumental in our shared success.

As we look ahead, let us remain steadfast in our pursuit of knowledge and excellence.. May this edition of HARMONY serve as a testament to our collective efforts and a beacon of inspiration for all.

As you embark on this new academic journey, remember that every step you take, no matter how small, brings you closer to your goals. Each challenge you face is an opportunity to grow, learn, and become stronger. Believe in your abilities, stay curious, and never be afraid to ask questions. Your determination and hard work will pave the way to success. Remember, the road to achievement is often filled with obstacles, but with perseverance and a positive mindset, you can overcome anything. I believe in each one of you and am here to support you every step of the way. Let's make this year a memorable and impactful one!

Prof. Kajari Sur
Department of CSE(IOTCSBT)

Welcome to the nerve center of technological advancement and innovation within our esteemed institute the Information Technology Department. As we navigate the digital age, our IT wizards play a crucial role in shaping the future of technology and education.

Led by visionary faculty members and supported by talented students, our IT department is at the forefront of integrating technology into every aspect of academic life. From cutting-edge research projects to innovative teaching methodologies, they ensure that our students are equipped with the skills and knowledge needed to thrive in the 21st-century digital landscape.

The department also integrates industrial visits, training programs, project assignments, guest lectures by experts, workshops, and seminars into its teaching methodology, enriching students' learning experiences.

In conclusion, the Information Technology Department at IEM acts as a center for transformation, progress and excellence across our campus.

Prof. Sudipta Bhuniya
Department of CSE(IOTCSBT)

Prof. Partha Sarathi Paul
Department of IT

Welcome to the exciting world of computer science and allied branches. As you embark on this journey, remember that you have the potential to create something amazing. Embrace the challenges you encounter; they are opportunities to grow and innovate. Your creativity and problem-solving skills will be your greatest assets. Never be afraid to ask questions or seek help collaboration is key in this field. Imagine the possibilities, from developing life saving technologies to creating entertainment that brings joy to millions. Your work can make a real difference in the world. Stay curious, stay persistent, and most importantly, enjoy the process of learning and discovery.

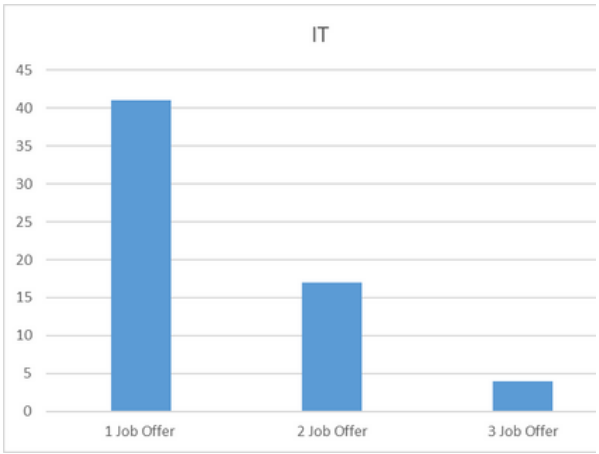
You have the power to shape the future—let's get started!

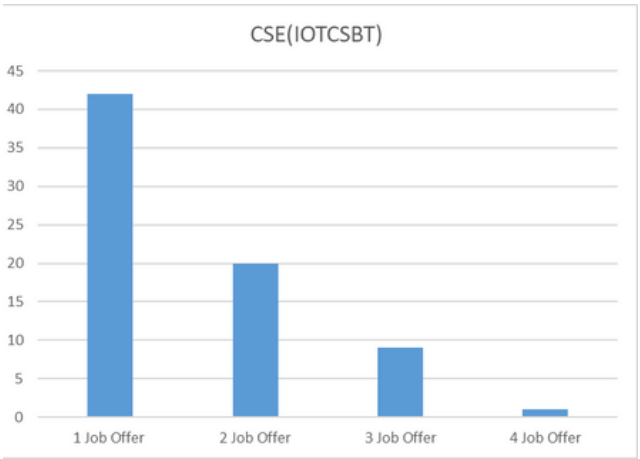
PLACEMENT 2023-2024

2024 PASSOUT BATCH PLACEMENT REPORT

	IOTCSBT	IT
Total	61	66
1 Job Offer	42	41
2 Job Offers	20	17
3 Job Offers	9	4
4 Job Offers	1	

Highest Package: 19.18 LPA



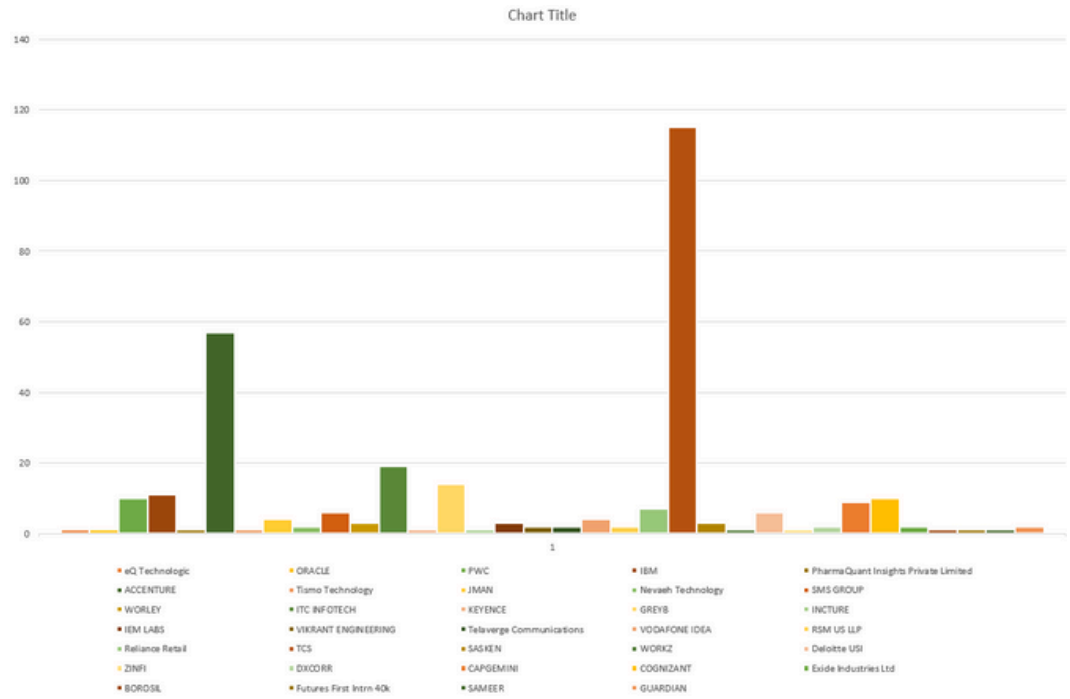


2024 PASSOUT BATCH PLACEMENT REPORT

SL NO	COMPANY NAME	TOTAL OFFERS
1	ORACLE	1
2	IBM	11
3	TCS	115
4	EQ TECHNOLOGIC	1
5	Tismo Technology	1
6	JMAN	4
7	Nevaeh Technology	2
8	SMS GROUP	6
9	WORLEY	3
10	ITC INFOTECH	19
11	KEYENCE	1
12	GREYB	14
13	ACCENTURE	57
14	INCTURE	1
15	IEM LABS	3
16	VIKRANT ENGINEERING	2
17	Telaverge Communications	2
18	PWC	10

2024 PASSOUT BATCH PLACEMENT REPORT

SL NO	COMPANY NAME	TOTAL OFFERS
19	VODAFONE IDEA	4
20	RSM US LLP	2
21	Reliance Retail	7
22	PharmaQuant Insights Private Limited	1
23	SASKEN	3
24	WORKZ	1
25	Deloitte USI	6
26	ZINFI	1
27	DXCORR	2
28	CAPGEMINI	9
29	COGNIZANT	10
30	Exide Industries Ltd	2
31	BOROSIL	1
32	Futures First Intrn 40k	1
33	SAMEER	1
34	GUARDIAN	2



RESEARCH

Faculty: Conference Publications			
SL No	**Topic of Publication**	**Authors**	**Conference Name**
1	The Visual Assistant - Image-to-Speech Generator	Amrit Raj; Sanchita Ghosh; Bharat Gupta	7th International Conference for Convergence in Technology (I2CT),Pune, Maharashtra
2	A Novel Handoff Algorithm for 5	Prithwijit Mukherjee, Sanchita Ghosh, Anisha Halder Roy	International Conference on Computers and Devices for Communication
3	Predictive Analysis for Financial Forecasting - Past and Present	Partha Sarathi Paul, Dr. Rajendrani Mukherjee	-
4	Secure Blockchain: Assessing Specific Security Threats	Ananya, G., Priyanjali, D., Baisakhi, D., Abhishek, D.	Lecture Notes on Data Engineering and Communications Technologies,
5	A Unique Approach for Detection and Removal of Key Loggers	Kedia, M.K., Das, B.	Lecture Notes on Data Engineering and Communications Technologies,
6	Deep Learning Approaches to Improve Effectiveness and Efficiency for Time Series Prediction	Ali, D., Tiwari, N., Das, B., Bhanja, S., Das, A.	Lecture Notes on Data Engineering and Communications Technologies,
7	IoT-Blockchain Integration: The Way Ahead	Ray, P.P., Bhargavi,, Das, B., Das, A.	Lecture Notes on Data Engineering and Communications Technologies,
8	An Analysis of Energy Consumption of Blockchain Mining and Techniques to Overcome It	Eshani, G., Rajdeep, D., Shubhankar, R., Baisakhi, D.	Lecture Notes on Data Engineering and Communications Technologies,
9	A Critical Review on Quantum Cryptography	P. Roy, S. Sahoo, A.K. Mandal, I. Basu	Journal of Quantum Computing
10	Offline Signature Verification System using Ensemble Learning	Avijit Bose, Aniket paul, Debanjan Bhattacharya, Dipannita Ghosh Sneha, Satyajit Chakrabarti	AdComSys 2024
11	A Food Supply Chain for Internet of Health Things using Blockchain	Puja Das, Amrita Haldar, Moutushi Singh, and Deepsubhra Guha Roy	ICNSBT 2023
12	A blockchain-based secure approach to access genomic data using smart contracts	Puja Das, Moutushi Singh, Kajari Sur	DoSIER 2023
13	An Innovative Deep-Learning approach for classifying Ayurvedic Medicinal	Puja Das, Rakhi Bharadwaj, Moutushi Singh	International Conference on Science of Rudraksh-2023
14	Early Prediction of Cataract using Convolutional Neural Network	Shuvam Chakraborty, Susovan Jana	IEEE Devices for Integrated Circuit (DevIC), 2023
15	An Integrated Framework for Smart Monitoring of Orange Orchard	Shuvam Chakraborty, Susovan Jana	7th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech) - IEMENTech2023
16	A Secure Text Steganography Using Randomized Mathematical Functions and LSB	Sakyojit Banerjee, Samanawaya Datta, Dipanjan Ghosh, Susovan Jana	7th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech) - IEMENTech2024
17	The future of IOT and IOT authentication	Kajari Sur, Pallab Maity, Indranil Mukhopadhyay	IEM ECON 2023
18	Pose, Expression, Illumination invariant 3D Face Recognition based on Transfer Learning	Koushik Dutta, Vishesh Mohanty, Animesh Dutta, Aritra Biswas, Rohan Sutradhar, Prathama Sarkar, Ondrej Krejcar, and Debotosh Bhattacharjee	2nd International Conference on Data, Electronics and Computing (ICDEC-2023)
19	Prediction of S-Palmitoylation sites in the Male/Female Mouse using Protein Language Model	Tapas Chakroborty, Anirban Das, Soumyendu Sekhar Bandyopadhyay, Anup Kumar Halder, Jakub Wlodarczyk, and Subhadip Basu	4th International Conference on Frontiers in Computing and Systems (COMSYS-2023)

Faculty : Book Publications

SL No	Name of the Book	Authors	Name of Publisher
1	Augmented and Virtual Reality in Social Learning: Technological Impacts and Challenges	Shreejita Mukherjee, Sanchita Ghosh	DeGruyter, Germany
2	Emerging Technologies in Data Mining and Information Security - Book Chapter	Subhabrata Sengupta, Anish Banerjee, Satyajit Chakrabarti	Springer
3	Lecture Notes on Data Engineering and Communications Technologies - Book Chapter	Subhabrata Sengupta, Anish Banerjee, Satyajit Chakrabarti	Springer
4	Lecture Notes on Data Engineering and Communications Technologies 62, pp 501-511, Compter Science, Chapter 83	Partha Sarathi Paul	Springer
5	Compter Science, Chapter 83	Partha Sarathi Paul	Taylor and Francis
6	Blockchain-of-Things for Smart Disaster Management	Puja Das, Moutushi Singh, and Deepsubhra Guha Roy	Springer
7	IoT and Blockchain Enable Cognitive Framework for Secure Shared Business Transaction Services in a Smart City	Puja Das, Moutushi Singh	CRC
8	Agri-Chain: A Blockchain-Empowered Smart Solution for Agricultural Industry	Puja Das, Moutushi Singh, Chitra Jain, and Ansul	-

Faculty : Journal Publications

SL No	Topic of Publication	Authors	Journal Name	Volume	Pages	Indexing
1	Robotics in Medical Domain: The Future of Surgery, Healthcare and Imaging	Anisha Halder Roy, Sanchita Ghosh, Bharat Gupta	Wireless Personal Communications	132(4)	2885-2903	SCI, SCOPUS
2	Exploring Appropriate ERP Framework towards Indian Small and Medium Enterprises using Decision Tree	Dr. Sanchita Ghosh, Avik Basu	International Journal of Business Intelligence and Data Mining	21	4	Scopus
3	AN INTEGRATED FRAMEWORK FOR QUALITY EVALUATION OF FRUITS AND VEGETABLE STORE LOCATED IN THE SUPERMARKET UNDER UTOPIAN ENVIRONMENT	Susovan Jana, Bijan Sarkar, Ranjan Parekh, Surajit Nath	International Journal of Industrial Engineering: Theory, Applications, and Practice	30	51-66	SCIENTIFIC CITATION INDEX-EXPANDED (SCIE), SCOPUS
4	Efficient Data Mining Model for Question Retrieval and Question Analytics using Semantic Web Framework in Smart E-Learning Environment	Subhabrata Sengupta, Anish Banerjee, Satyajit Chakrabarti	International Journal of Emerging Technologies in Learning	17	4-17	Scopus
5	Relevant Influence of Semantic Web Framework on Smart E-Learning Environment	Subhabrata Sengupta, Anish Banerjee, Satyajit Chakrabarti	International Journal of Emerging Technologies in Learning	Vol. 16 Issue 17	p177-190	-
6	Accuracy Enhancement of Epileptic Seizure Detection: A Deep Learning Approach with Hardware Realization of STFT.	Sai Manohar Beeraka, Abhash Kumar, Mustafa Sameer, Sanchita Ghosh & Bharat Gupta	Circuits, Systems, and Signal Processing	41	461–484	SCI
7	An Innovative Approach of Selecting Cloud Provider through Service Level Agreements	Aveek Basu, Dr. Sanchita Ghosh, Dr. Sraboni Dutta	International Journal of Business Information Systems	DOI: 10.1504/IJBIS.2021.100400972	1746-0972	Scopus
8	Exploring Appropriate ERP Framework towards Indian Small and Medium Enterprises using Decision Tree	Aveek Basu, Dr. Sanchita Ghosh, Dr. Sraboni Dutta	International Journal of Business Intelligence and Data Mining	DOI: 10.1504/IJBIDM.2022.10042760	-	Scopus
9	Analysing the Cloud Efficacy by Fuzzy Logic	Aveek Basu, Dr. Sanchita Ghosh, Dr. Sraboni Dutta	International Journal of Business Information Systems	10.1504/IJBIS.2021.100399947	-	Scopus
10	MLWR-2PAKA: A Hybrid Module LearningWithRounding-Based Authenticated Key Agreement Protocol forTwo-Party Communication	Swagatam Basu, Kübra Seyhan, SK Hafizul Islam, Sedat Akleylek	IEEE Systems Journal (Early Access)	DOI: 10.1109/JSYST.2023.3288629	Page(s): 6093 - 6103	IEEE,Scopus
11	Collaborative data gathering and recharging using multiple mobile vehicles in wireless rechargeable sensor network	Rupayan Das, Dinesh Dash	International Journal of Communication Systems	DOI: https://doi.org/10.1002/dac.5573	1-26	SCIE, SCOPUS

SL No	Topic of Publication	Authors	Journal Name	Volume	Pages	Indexing
12	Integral cryptanalysis: a new key determination technique for 3-phase Kuznyechik encryption	Rupayan Das et al.	Engineering Research Express , IOP Science	5	1-11	ESCI, SCOPUS
13	Joint On-demand data gathering and recharging by multiple mobile vehicles in delay sensitive WRSN using variable length GA	Rupayan Das, Dinesh Dash	Computer Communication, Elsevier	204	130-146	SCIE, SCOPUS
14	Chromatographic method development for simultaneous determination of serotonin, melatonin, and L-tryptophan: Mass transfer modeling, chromatographic separation factors, and method prediction by artificial neural network	Dipshikha Tamili, Susovan Jana, Paramita Bhattacharjee	Journal of Chemometrics	https://doi.org/10.1002/cem.3520	-	SCI
15	Exploring PBCA Rules For One and Two Fixed Points, Journal of Complex Systems	Baisakhi Das, Mamata Dalui, Mousumi Saha, Kasturi Ghosh, Nilanjana Das and Biplab K Sikdar	Journal of Complex Systems	-	-	ESCI and SCOPUS
16	SSKA: Secure Symmetric encryptionexploiting Kuznyechik Algorithm fortrustworthy communication	Rupayan Das, Angshuman Khan, Rajeev Arya, Boykuziev Ilkhom, AbdurakhimovBakhtiyor, Nuriddin Safoyev and Zarif Khudoykulov	International Journal of System Assurance Engineering and Management, Springer	-	-	ESCI and SCOPUS
17	A Proximal Policy Optimization withCuriosity Algorithm for Virtual DroneNavigation	Rupayan Das, Angshuman Khan, Gunjan Paul	Engineering Research Express , IOP Science	-	-	Scopus
18	Block-A-City: An Agricultural Application Framework using Blockchain for Next Generation Smart Cities	Puja Das, Moutushi Singh, Dimitrios A. Karras and Deepsubhra Guha Roy	IETE Journal of Research	-	-	Scopus
19	Blockchain for healthcare using Deep learning	Puja Das, Moutushi Singh	Journal of Multimedia Information System	17(2),	121-130	SCI
20	Modelling of InAs nanowire and MOSFET under phonon emission and absorption by using NEGF formalism	Kaushik Mazumdar,Subindu Saha, Sk Rejuan Ali	Superlattices and Microstructures	150	106758	-
21	FuzzyPPI: Large-Scale Interaction of Human Proteome at Fuzzy Semantic Space	Anup Kumar Halder, Soumyendu Sekhar Bandyopadhyay, Witold Jedrzejewski, Subhadip Basu, Jacek Sroka	IEEE Transactions on Big Data (IF: 7.2)	-	1 - 12	-

Students: Conference Publications			
SL No	**Topic of Publication**	**Authors**	**Conference Name**
1	Early Prediction of Cataract using Convolutional Neural Network	Shuvam Chakraborty, Susovan Jana	DevIC 2023
2	An Integrated Framework for Smart Monitoring of Orange Orchard	Shuvam Chakraborty, Susovan Jana	IEMENTech2023
3	A Secure Text Steganography Using Randomized Mathematical Functions and LSB	Sakyojit Banerjee, Samanawaya Datta, Dipanjan Ghosh, Susovan Jana	IEMENTech2023
4	A Secure Softwarized Blockchain-based Federated Health Alliance for Next Generation IoT Networks	Puja Das, Moutushi Singh and Deepsubhra Guha Roy	IEEE Globecom Workshops (GC Wkshps)
7	A Food Supply Chain for Internet of Health Things using Blockchain	Puja Das, Amrita Haldar, Moutushi Singh, and Deepsubhra Guha Roy	ICNSBT 2023
8	A blockchain-based secure approach to access genomic data using smart contracts	Puja Das, Moutushi Singh, Kajari Sur	DoSIER 2023
9	An Innovative Deep-Learning approach for classifying Ayurvedic Medicinal	Puja Das, Rakhi Bharadwaj, Moutushi Singh	International Conference on Science of Rudraksh-2023
10	The Visual Assistant - Image-to-Speech Generator	Amrit Raj, Sanchita Ghosh, Bharat Gupta	2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET)

Students: Journal Publications					
SL No	**Topic of Publication**	**Authors**	**Journal Name**	**Volume**	**Pages**
1	Relevant Influence of Semantic Web Framework on Smart E-Learning Environment	Subhabrata Sengupta, Anish Banerjee, Satyajit Chakrabarti	International Journal of Emerging Technologies in Learning	Vol. 16 Issue 17	177-190
2	Data Mining Model for Question Retrieval and Question Analytics using Semantic Web Framework in Smart E-Learning Environment	Anish Banerjee, Subhabrata Sengupta	International Journal of Emerging Technologies in Learning	17	4 - 17

Students: Book Chapter Publications							
SL No	**Name**	**Title of the book/chapter published**	**National/ International**	**Year of publication**	**ISSN/ ISBN No**	**Name of the publisher**	**Write Scopus/UGC Care/Other**
1	Shreejita Mukherjee, Sanchita Ghosh	Augmented and Virtual Reality in Social Learning: Technological Impacts and Challenges	International	2023	9783110981445	DeGruyter, Germany	Scopus (Grade A)
2	Puja Das, Moutushi Singh, and Deepsubhra Guha Roy	Blockchain-of-Things for Smart Disaster Management	International	2023	NA	Springer	Scopus (Grade A)
3	Puja Das, Moutushi Singh	IoT and Blockchain Enable Cognitive Framework for Secure Shared Business Transaction Services in a Smart City	International	2023	NA	CRC	Scopus (Grade A)
4	Puja Das, Moutushi Singh, Chitra Jain, and Ansul	Agri-Chain: A Blockchain-Empowered Smart Solution for Agricultural Industry	International	2023	NA	Springer	Scopus (Grade A)

EVENTS

TALK ON IOT
&
FOUNDATION DAY CELEBRATION

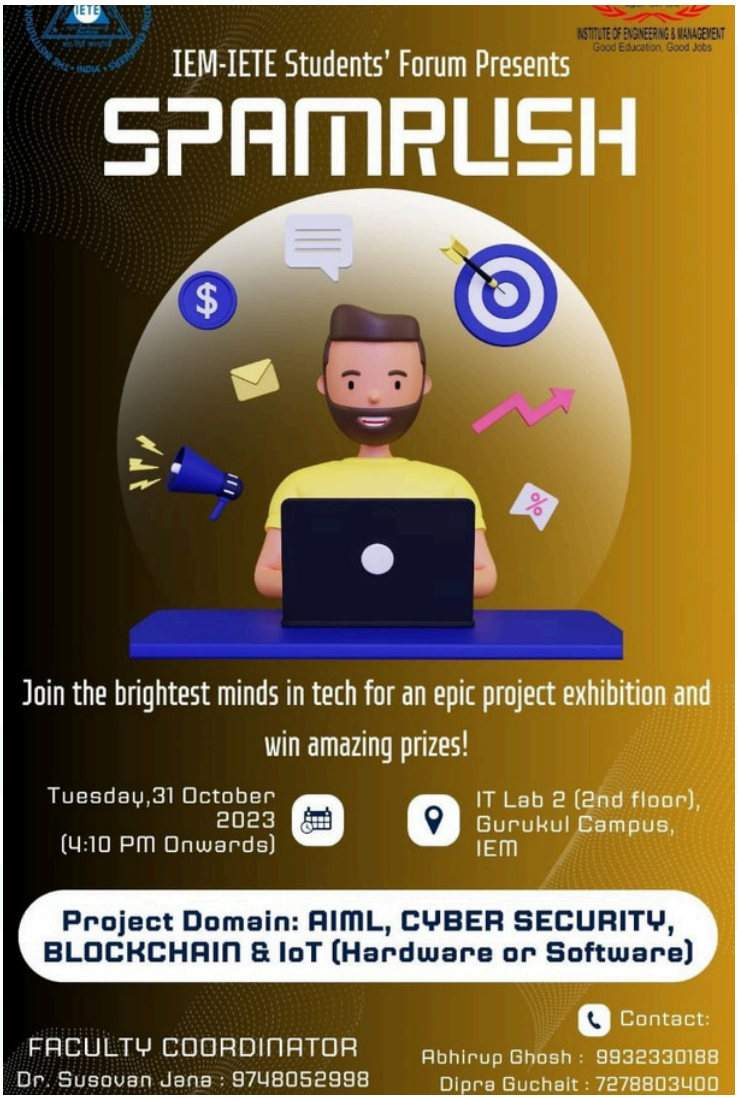
Date: 10 August 2023, Mode : Offline

The IEM-IETE Students' Forum celebrated IETE Students' Day with a significant event at Seminar Hall 3, Gurukul Campus, IEM, Kolkata. Prof. Dr. Moutushi Singh initiated the event with a warm welcome address, setting a positive tone for the proceedings. The event was graced by the presence of Prof. Dr. Chinmoy Ghorai, Assistant Professor of Electronics & Telecommunication Engineering at Jadavpur University, who delivered an insightful talk on "IoT: Connecting the World in a Smarter Way." Additionally, Prof. Subhabrata Sengupta shared his expertise, further enhancing the attendees' knowledge. Certificates were also awarded to the new members of the IEM-IETE Students' Forum and the organizing team, acknowledging their contributions. The event concluded with a vote of thanks by Dr. Susovan Jana, expressing gratitude and recognizing the collective efforts behind the successful organization of the event.


Communications Criteria Range
Long Range
Medium Range
Short Range

“SPAMRUSH”
PROJECT EXHIBITION

Date: 31 October 2023 Mode : Offline



Spamrush was an innovative project exhibition organized by the IEM-IETE Students' Forum, showcasing cutting-edge advancements in AI/ML, cybersecurity, blockchain, and IoT. The event brought together students, faculty, and industry professionals to explore and discuss the latest developments in these critical areas. Participants presented a diverse range of projects that demonstrated the practical applications of these technologies in solving real-world challenges. The exhibition served as a platform for budding technologists to display their creativity, technical prowess, and understanding of emerging technologies. Through interactive presentations and demonstrations, attendees gained valuable insights into the future of technology and its impact on various industries. They were evaluated by Prof. Dr. Koushik Dutta and Prof. Soumadip Biswas. Spamrush not only highlighted the talent within the IEM community but also fostered collaboration and knowledge-sharing among students and experts alike.


IEM - IETE
STUDENTS' FORUM


IEM - IETE
STUDENTS' FORUM
INSTITUTE OF ENGINEERING & MANAGEMENT
Garukul Campus, Y-12, Salt Lake
Electronics Complex, Sector V, Kolkata - 700091
CERTIFICATE

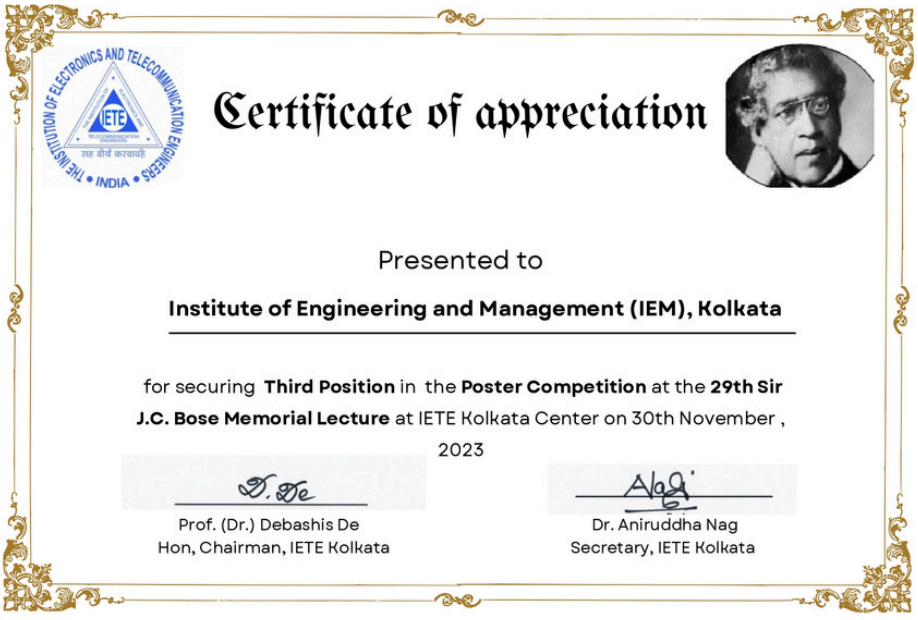

CERTIFICATE


IEM - IETE
STUDENTS' FORUM
CERTIFICATE

AJC BOSE MEMORIAL LECTURE

Date: 30 November 2023, Mode : Offline

Our team proudly secured 3rd place in the poster competition held at AJC Bose Memorial Hall in IETE Saltlake Campus. The event featured diverse and creative entries, and our innovative approach stood out among strong competition. This achievement highlights our dedication and teamwork, making it a memorable experience for all participants.



FACULTY DEVELOPMENT PROGRAM ON EXPLORING DATA HORIZONS: APPLICATION ON DATA SCIENCE

Date: 18-22 December 2023 Mode: Online

5-Days online Faculty Development Program (Online Mode) on
Exploring Data Horizons: Application on Data Science
organized by
Department of Information Technology
in association with HRDC, IEM .

Participants : Faculty of different colleges across India
Venue : Virtual Online Zoom Platform
Coordinators: Prof. Kajari Sur
Prof. Dr. Avipsita Chatterjee
Prof. Dr. Soumyendu Sekhar Bandyopadhyay
Prof. Dr. Amit Kumar Mandal
Prof. Dr. Koushik Dutta
Prof. Subhabrata Sengupta

Resource Persons:

- **Day 1 (December 18 2023):** Dr. Abhishek Das, Associate Professor and former Head in the Dept. of Computer Sc. & Engineering at Aliah University, Kolkata
- **Day 2 (December 19 2023):** Dr. Sourav Pramanik, Assistant Professor, Dept. of Computer Science, New Alipore College, Kolkata.
- **Day 3 (December 20 2023):** Dr. Anup Kumar Halder, Assistant Professor (Research), Warsaw University of Technology, Warsaw, Poland.
- **Day 4 (December 21 2023):** Mr. Aditya Sarkar, Principal Architect, Technology at Cognizant.
- **Day 5 (December 22 2023):** Dr. Joy Dutta, Postdoctoral Fellow in the center for Cyber-Physical Systems of Robotics and Intelligent Systems, Department of Electrical Engineering and Computer Science (Research and Development division), Khalifa University, Abu Dhabi, United Arab Emirates.

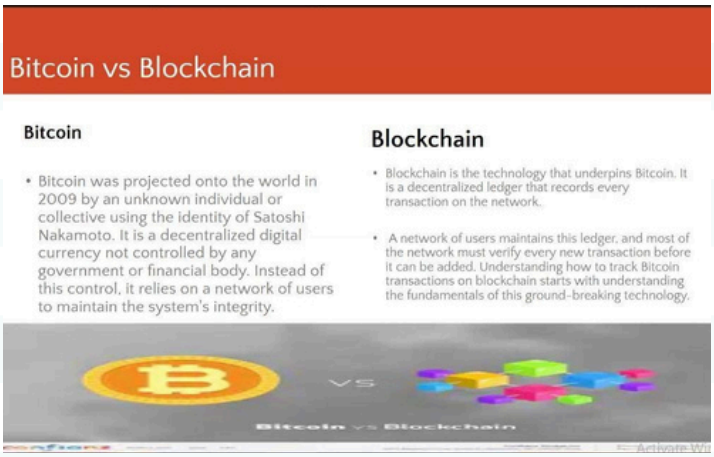
Organizing Unit/Agency, Collaborating Agency:

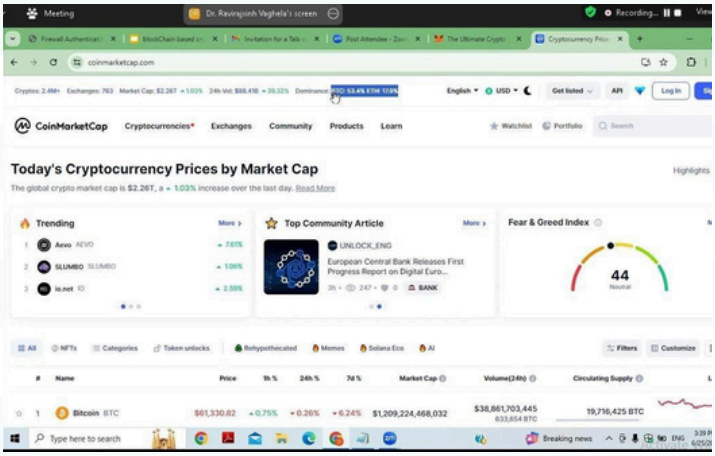
Department of Information Technology, Institute of Engineering & Management, Kolkata in association with HRDC, IEM-UEM Group

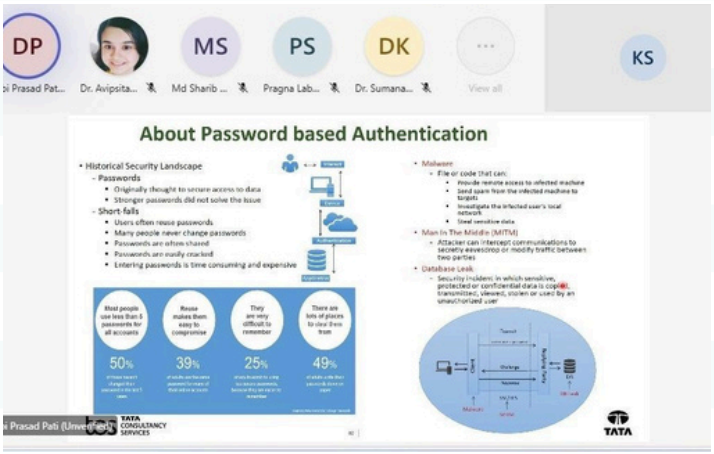
Short description of the event:

The Faculty Development Program, "Exploring Data Horizons: Application in Data Science, " seeks to elevate participants ' expertise by providing a deep dive into data science principles, tools, and emerging trends. Focused on skill enhancement, the program imparts hands-on training in data analysis, machine learning, and visualization. Its objective is to enable faculty members to seamlessly integrate data science concepts into their teaching methodologies, adapt to industry trends, and foster interdisciplinary collaboration. The program also aims to cultivate a community of practice, stimulate research, enhance curricula, and ensure quality assurance, ultimately empowering educators to excel in delivering relevant and innovative data science education.

Geo tagged Images of the event







PHOTOGRAPHY COMPETITION "VISION INDIA 2024"

Date: 26 January 2024, Mode : Online

IEM-IETE Students' Forum celebrated 74th Republic Day by organizing a photography competition based on the theme of "Vision India". It was a great way for the contestants to express their patriotism and showcase their creativity. The open exhibition voting process ensured that the winner of the competition was chosen fairly and transparently. All participants received a participation certificate and the winner received the prize and winning certificate. This recognition will surely encourage the contestants to pursue their passion for art and photography.

Furthermore, the appreciation from the HOD of IT department, Prof. Dr. Moutushi Singh and Prof. Subhabrata Sengupta, is a wonderful gesture that shows the students that their efforts and hard work are valued and recognized by their mentors. The memories created through this event will be cherished by the participants for years to come.

BOOKFAIR

Date: 29 January 2024 Mode: Offline

The International Book Fair "Boimela Prangon" is a highly anticipated event for book enthusiasts, and this year, IEM Kolkata proudly took part. The Department of IT-CSE (IOTCSBT) hosted a stall at the event, where our esteemed HOD Prof. Dr. Moutushi SIngh along with professors such as Dr. Susovan Jana and Prof. Aditya Ray, along with eager students, were present. The stall's inviting atmosphere drew visitors from far and wide. A key highlight was the engaging quiz conducted by the talented students, which, being in Kolkata's native language, added an extra layer of enjoyment. The IEM stall stood out as one of the liveliest spots at the Book Fair, leaving a memorable impression on all who visited.


IEM
UTTARAN
35 Years


IEM-UEM
GROUP


IEM


IEM
35 Years

FACULTY DEVELOPMENT PROGRAM ON CONNECTIVITY CONCLAVE: UNVEILING THE INTERNET OF THINGS AND WSN

Date: 18-22 March 2024, Mode: Hybrid

5-Days Faculty Development Program (Hybrid Mode) on
Connecting Conclave: Unveiling the Internet of Things and WSN
organized by
Department of Information Technology, CSE(IOTCSBT), CSE(IOT),
IEM, Kolkata, Salt Lake Campus
in assiciation with IEM-UEM IQAC

Participants : Faculty of different colleges across India
Venue : Virtual Online Zoom Platform
Coordinators: Prof. Avijit Bose
Prof. Kajari Sur
Prof. Dr. Avipsita Chatterjee
Prof. Dr. Soumyendu Sekhar Bandyopadhyay
Prof. Dr. Rupayan Das

Resource Persons:

- **Day 1 (March 18 2024):** Speaker: Dr. Debashis De Topic: Internetof Drone Things
- **Day 2 (March 19 2024):** Speaker: Dr. Dinesh Dash Topic: A scalable jointdata gathering and charging systemin Wireless Rechargeable Sensor Networks
- **Day 3 (March 20 2024):** Speaker: Mr. Sourav Chakraborty Topic: Transforming StudentWelfare and Off-Campus financial Goals throughDigital Innovation
- **Day 4 (March 21 2024):** Speaker: Mr. Amartya Mukherjee Topic: Sky's the Limit: Navigating the Future with the Internetof Drone Things
- **Day 5 (March 22 2024):** Speaker: Dr. Amit BanerjeeTopic: Microelectronics Technologies in IoT & WSN: On-chip integrable Terahertz Devices

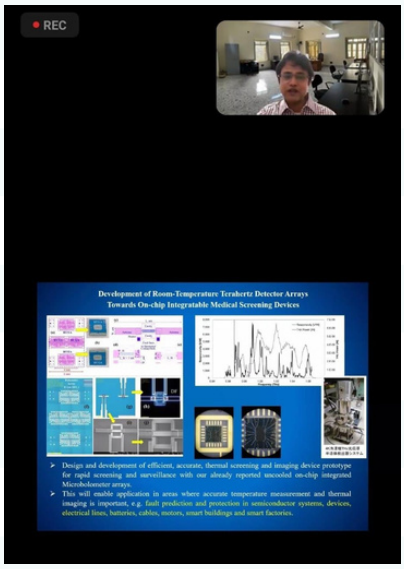
Organizing Unit/Agency, Collaborating Agency:

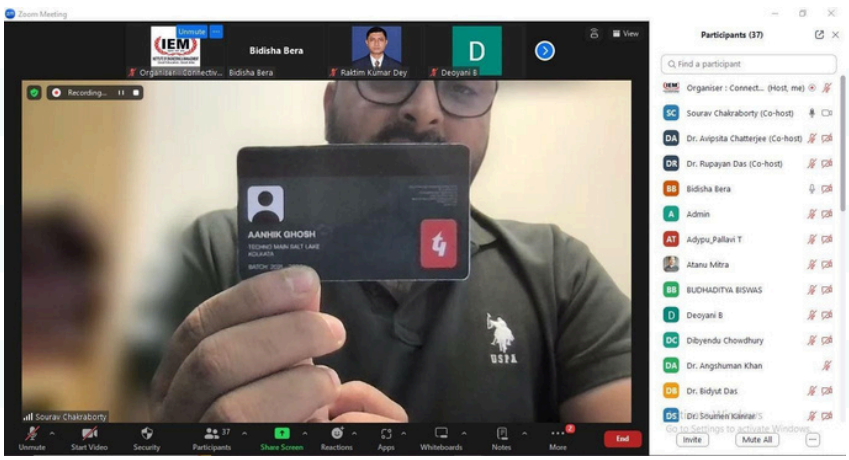
Organised by Department of Information Technology, CSE(IOTCSBT), CSE(IOT), Institute of Engineering & Management, Kolkata in association with IEM-UEM IQAC.

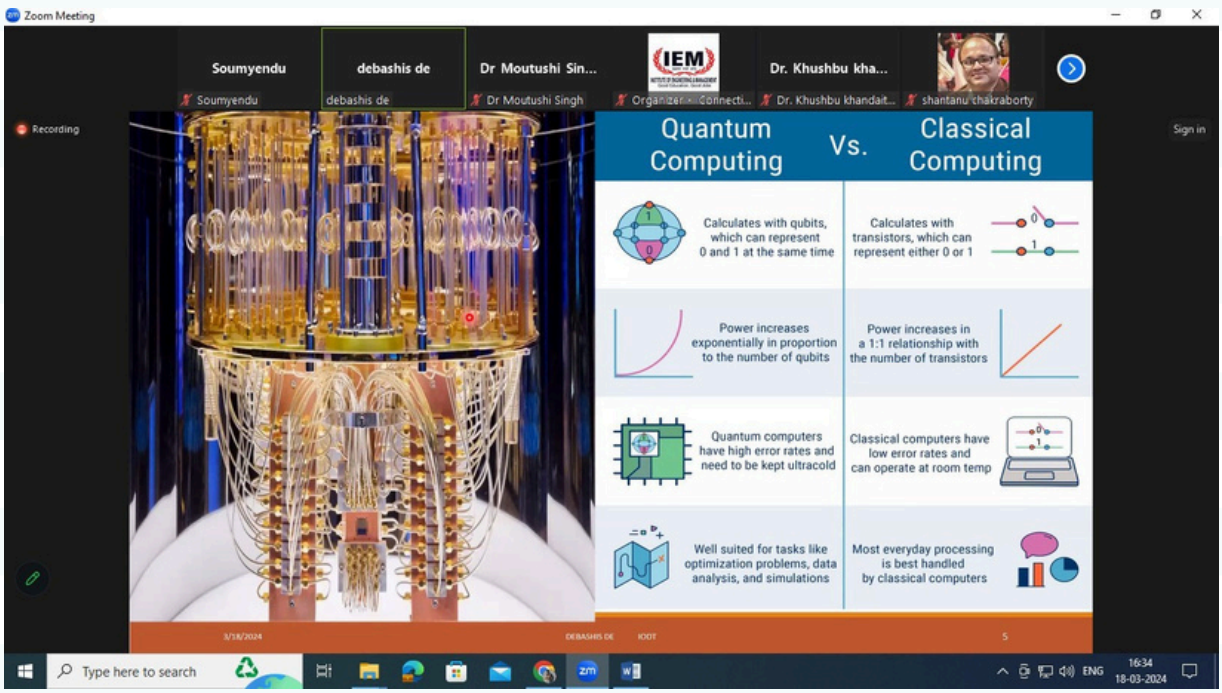
Short description of the event:

The 5-Day Faculty Development Program (FDP) titled "Connectivity Conclave: Unveiling the Internet of Things and Wireless Sensor Networks (WSN)" was successfully conducted from March 18 to March 22, 2024, at the Institute of Engineering & Management, Kolkata. The hybrid mode of the event facilitated broad participation from both on-site and online attendees, focusing on the latest advancements and practical applications in IoT and WSN.


Zoom Meeting
You are viewing Amartya Mukharjee's screen
View Options
Amartya Mukharjee
Recording...
IEM
Sky's the Limit: Navigating the Future with the Internet of Drones
Prof. Amartya Mukherjee
HoD, CSE(AIML), CSBS,
Institute of Engineering & Management, Salt Lake, Kolkata
Participants (14)
Find a participant
Oraganizer: Connec... (Host, me)
Amartya Mukharj... (Co-host)
Prof. Shreyasi Dutta (Co-host)
Deoyani B
Dibyendu Chowdhury
Dr. Angshuman Khan
Dr. Soumen K...
Ask to Unmute
Dr. Uttam Deshmukh
Raunak Bhattacharyya
Smita Jain
SUPRIYA MAITY
SUSMITA SARKAR
Unmesha Ray
Unmute
Start Video
Security
Participants
Share Screen
Reactions
Apps
Whiteboards
Notes
More
End
Invite
Mute All


REC
Development of Room-Temperature Terahertz Detector Arrays
Towards On-chip Integratable Medical Screening Devices


Bidisha Bera
Recording...
AANHIK GHOSH
Participants (37)
Unmute
Start Video
Security
Participants
Share Screen
Reactions
Apps
Whiteboards
Notes
More
End
Invite
Mute All


Zoom Meeting
Soumyendu
debashis de
Dr Moutushi Sin...
Dr. Khushbu kha...
shantanu chakraborty
Recording
Quantum Computing
Vs.
Classical Computing
Calculates with qubits, which can represent 0 and 1 at the same time
Calculates with transistors, which can represent either 0 or 1
Power increases exponentially in proportion to the number of qubits
Power increases in a 1:1 relationship with the number of transistors
Quantum computers have high error rates and need to be kept ultracold
Classical computers have low error rates and can operate at room temp
Well suited for tasks like optimization problems, data analysis, and simulations
Most everyday processing is best handled by classical computers
Sign in
Type here to search
ENG
16:34
18-03-2024

FACULTY DEVELOPMENT PROGRAM ON BYTES TO BITS: NAVIGATING CYBER SECURITY AND CRYPTOGRAPHY

Date: 24-28 June 2024, Mode: Hybrid

5-Days Faculty Development Program on Bytes to Bits: Navigating Cyber Security and Cryptography
organized by
Department of Information Technology, CSE(IOTCSBT), CSE(IOT), IEM, Kolkata, Salt Lake Campus
in assiciation with Cyber Security, Centre of Excellence, West Bengal and HRDC, IEM-UEM Goup

Participants : Faculty of different colleges across world
Venue : Virtual Online Zoom Platform
Coordinators: Prof. Kajari Sur
Prof. Subhabrata Sengupta
Prof. Avijit Bose
Prof. Dr. Soumyendu Sekhar Bandyopadhyay
Prof. Dr. Avipsita Chatterjee
Prof. Dr. Rupayan Das

Resource Persons:

- **Day 1 (June 24, 2024) Session-1:** Mr. Sohang Sengupta, Chapter Leader Banking Cluster EMEA - Information & Cyber-Security Lead – HCLTech.
- **Day 2 (June 25, 2024) Session-1:** Mr. Souvik Saha, IT Security Analyst at IEMA Research & Development Private Limited.
- **Day 2 (June 25, 2024) Session-2:** Dr. Ravirajsinh Vaghela, Assistant Professor, School of Cyber Security & Digital Forensics, National Forensic Sciences University , Ministry of Home Affairs, Govt. of India
- **Day 3 (June 26, 2024) Session-1:** Dr. Goutam Paul, Associate Professor, Cryptology and Security Research Unit (CSRU), Indian Statistical Institute, Kolkata, India
- **Day 3 (June 26, 2024) Session-2:** Dr.Rourab Paul, University of Pisa, Italy
- **Day 4 (June 27 2024) Session-1**: Mr. Mukunda Tamly, Information Security Analyst, ISOAH Data Securities Pvt. Ltd.
- **Day 4 (June 27 2024) Session-2:** Mr. Arnab Bhattacharjee, Sales & Business Development as Key Account Manager @SGS - Global Leader in TIC
- **Day 5 (June 28 2024) Session-1:** Mr. Sourav Patra, Professional IT Security Analyst, IEMLABS
- **Day 5 (June 28 2024) Session-2:** Mr. Debi Prasad Pati, Business Development, Tata Consultancy Services

Organizing Unit/Agency, Collaborating Agency:

Department of Information Technology, CSE(IOTCSBT), CSE(IOT), IEM, Kolkata, Salt Lake Campus in association with Cyber Security, Centre of Excellence, West Bengal and HRDC, IEM-UEM Group

Short description of the event:

The FDP "Bytes to Bits: Navigating Cyber Security and Cryptography" aims to equip faculty with advanced knowledge and practical skills in cybersecurity and cryptography. Through a structured curriculum, interactive sessions, it enhances understanding of fundamen concepts and explores emerging trends like block chain and quantum cryptography. Participants develop proficiency in implementing cybersecurity measures and employing cryptographic techniques. The program fosters collaboration among academia, industry, and research, promoting curriculum enhancement to integrate relevant concepts. Encouraging research initiatives, it aims to inspire innovation and contribute to addressing contemporary cyber threats. Ultimately, the FDP empowers faculty to effectively educate students for careers in cybersecurity, meeting the demands of the digital age.

CREATIVE WRITING

Quantum Dot Qubits for Quantum Computing

-Dr. Amit Kumar Mandal

Basics of Quantum Dots:

Nanostructured materials have drawn a great deal of attention regarding their applications in diverse field of science and engineering. A solid, having particles' size<100 nm, shows astonishing electronic and optical properties and is known as nanostructured material [1]. This material can be divided into three: 1) Quantum well (two dimensional), 2) Quantum wire or nanowire (one dimensional), and 3) Quantum dot (zero dimensional). Quantum dots (Qdots) are semiconductor nano-crystals were firstly discovered in the early 1980s by a Russian physicist, Alexei Ekimov. They are made of with a combination of II-VI or III-V elements. They come under the range of 2-10 nm. They are also known as artificial atoms because of the fact that their energy structure has a resemblance to the atomic structure of an atom. Figure 1 shows the structure of density of states of quantum dots (Qdots).

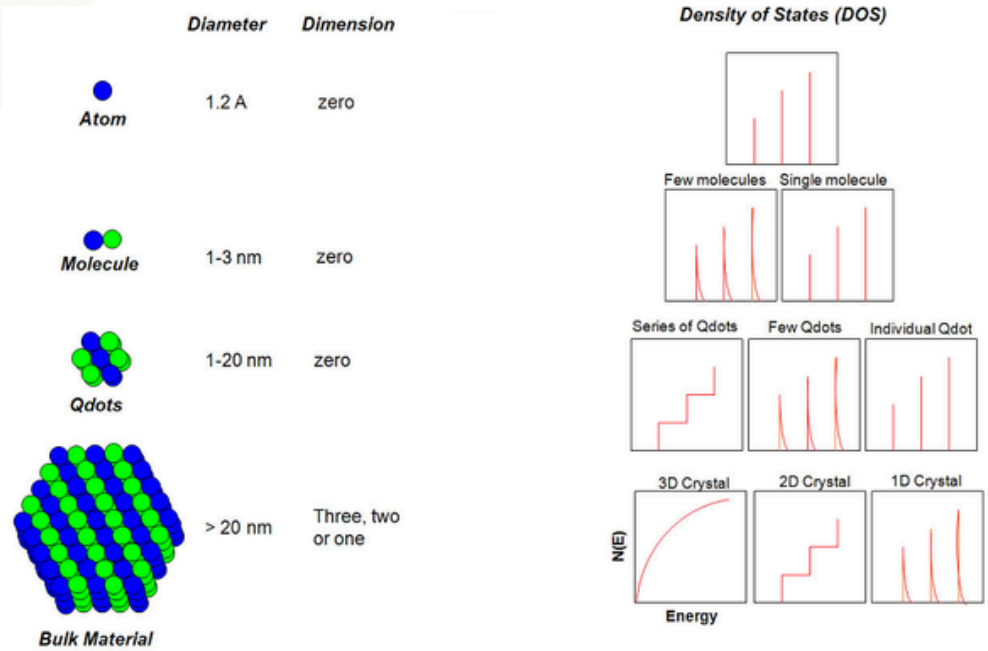


Fig. 1: Side-by-side comparison of density of states of an atom, a molecule, Qdots and Bulk material

Quantum Dot Spin Qubits:

The single electron spin in a semiconductor chip can act as qubit. In presence of magnetic field, an electron residing in each quantum dot acts as appealing qubit and this was proposed by Loss and DiVincenzo in the year of 1998 [2]. In case of quantum computing, information needs to be stored in a scalable quantum register. Quantum information is stored in terms of qubits, a two states quantum mechanical system. Physically, an electron (a spin-1/2 particle) having two spin states (spin up and spin down) can be used to encode information. Semiconductor may be the ideal host for solid state qubits.

Spin qubits are divided into different categories on the basis of how they encode spins into qubits. Regarding semiconductor spin qubits, the common thing is the confinement of spin to isolated sites. In Qdots, the movement of the electrons are confined in all three spatial directions and thus they become localized and behave as artificial atoms, i.e., their energy levels are discrete nature. Each of the electrons confined to such Qdots represents an ideal context of spin based quantum information processing.

Different types of spin qubits are as follows:

1. Loss-DiVincenzo (LD) spin qubit
2. Donor spin qubits and Kane's proposal
3. Singlet-triplet qubits
4. Exchange-only (EO) and resonant-exchange (RX) qubits
5. Spin qubits with additional charge degrees of freedom

Here, I have briefly discussed about Loss-DiVincenzo (LD) spin qubit.

Loss-DiVincenzo (LD) spin qubit:

An electron, a spin 1/2 particle, represents a physical qubit. It has two orthogonal basis states, spin up, $|\uparrow\rangle$, and spin down, $|\downarrow\rangle$. The encoding for a single electron spin, $S_i=\sigma_i/2$.

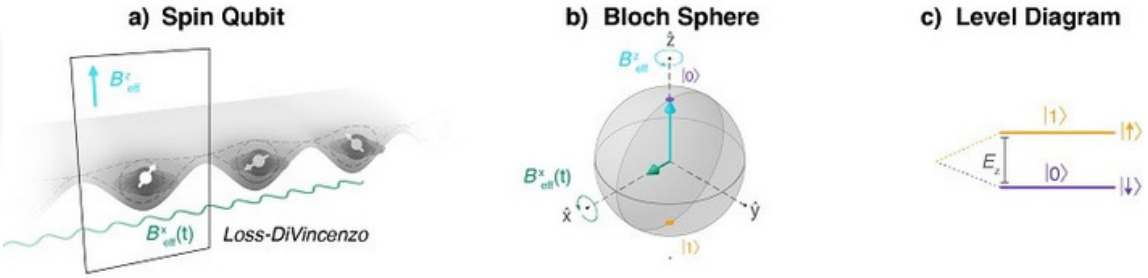


Fig. 2: a) Spin configuration, b) Bloch sphere, c) Energy level diagram associated with Loss-DiVincenzo

The Figure 2 shows the single spin Loss-DiVincenzo qubit which encodes quantum
Information in the spin state of a single electron. A time independent magnetic field lifts the degeneracy between the spin-up and spin-down states of the spin-1/2 electron, while a transverse ac magnetic field drives coherent rotation between spin-up and spin-down.

Loss-DiVincenzo qubit is a direct mapping between spin operators and encoded Pauli operators. Where, i is the Pauli's spin matrix for the electron at the ith site. When one electron is tightly confined in a dot, the electron spin dynamics are governed by Heisenberg exchange Hamiltonian and the single electron Zeeman Hamiltonian. So the total Hamiltonian is represented as [3]:

$$H(t) = \frac{1}{4}\sum_{\langle i,j\rangle} J_{ij}(t)\boldsymbol{\sigma}_i \cdot \boldsymbol{\sigma}_j + \frac{1}{2}\sum_i g_i \mu_B \mathbf{B}_i \cdot \boldsymbol{\sigma}_i,$$

Where, g_i and B_i represent Lande g factor and effective magnetic field respectively at the i^{th} site, J_{ij} represents time dependent interaction co-efficient between spins, B represents Bohr magneton.

References:

1. Kargozar, Saeid, Seyed Javad Hoseini, Peiman Brouki Milan, Sara Hooshmand, Hae-Won Kim, and Masoud Mozafari. "Quantum dots: a review from concept to clinic." *Biotechnology Journal* 15, no. 12 (2020): 2000117.
2. DiVincenzo, David P. "Quantum computing and single-qubit measurements using the spin-filter effect." Journal of applied physics 85, no. 8 (1999): 4785-4787
3. Burkard, Guido, Thaddeus D. Ladd, Andrew Pan, John M. Nichol, and Jason R. Petta. Semiconductor spin qubits." Reviews of Modern Physics 95, no. 2 (2023): 025003.

Facts About the Brain

- Prof. Dr. Sanchita Ghosh

1. Multitasking is impossible

When we think we're multitasking, we're actually context-switching. That is, we're quickly switching back-and-forth between different tasks, rather than doing them at the same time. The book Brain Rules explains how detrimental "multitasking" can be: Research shows your error rate goes up 50 percent and it takes you twice as long to do things.

2. An adult brain weighs about 3 pounds

The cerebrum makes up 85% of the brain's weight, and the brain makes up about 2% of a human's body weight. The texture of the brain is like a firm jelly. The heaviest normal human brain weighed 4.43 pounds. It belonged to the Russian Writer Ivan Turgenev. And the smallest brain, just 2.41 pounds, belonged to a woman.

3. About 75% of the brain is made up of water

This means that dehydration, even as small as 2%, can have a negative effect on brain functions. Dehydration and a loss of sodium and electrolytes can cause acute changes in memory and attention. To prevent any loss of body or brain function, take steps to keep your body properly hydrated.

4. The human brain will triple its size the first year of life

A, two year old baby will have an 80% fully grown brain. It will continue to grow until you're about 18 years old. It isn't until about the age of 25 that the human brain reaches full maturity. The human brain is the largest brain of all vertebrates relative to body size.

5. Headaches are caused by a chemical reaction

Chemical activity in your brain, the nerves or blood vessels surrounding your skull, or the muscles of your head and neck (or some combination of these factors) can play a role in primary headaches. Serotonin is a chemical necessary for communication between nerve cells. When serotonin or estrogen levels change, the result for some is a headache or migraine. Serotonin levels may affect both sexes, while fluctuating estrogen levels affect women only.

6. The human brain contains approximately one hundred billion neurons

This is about the same as the number of stars in the Milky Way galaxy. These neurons are connected by trillions of connections, or synapses. Experts call this a "neuron forest". Information runs between these neurons in your brain for everything we see, think, or do. These neurons move information at different speeds. The fastest speed for information to pass between neurons is about 250 mph. That being said, neurons only make up 10% of the brain.

7. It is a myth that humans only use 10% of our brain

We actually use all of it. We're even using more than 10 percent when we sleep. Although it's true that at any given moment all of the brain's regions are not concurrently firing, brain researchers using imaging technology have shown that, like the body's muscles, most are continually active over a 24-hour period.

8. Cholesterol is key to learning and memory

The brain has a higher cholesterol content than any other organ. In fact, about 25% of the body's cholesterol resides within the brain. The brain is highly dependent on cholesterol, but its cholesterol metabolism is unique. Because the blood-brain barrier prevents brain cells from taking up cholesterol from the blood, the brain must produce its own cholesterol. The brain's cholesterol is much more stable than the cholesterol in other organs, but when it breaks down, it is recycled into new cholesterol right in the brain.

9. Dreams are believed to be a combination of imagination, physiological factors, and neurological factors

The limbic system in the mid-brain deals with emotions in both waking and dreaming and includes the amygdala, which is mostly associated with fear and is especially active during dreams. Dreams are proof that your brain is working even when you are sleeping. The average human has about 4-7 dreams per night.

10. Short term memory lasts about 20-30 seconds

This has to do with your brain's capacity for holding small amounts of information in the active mind. The brain keeps this information in an available state for easy access, but only does so for about a minute and a half. Most people hold memory for numbers around 7 seconds, and memory for letters around 9 seconds. In addition, the brain can store up to 7 digits in its working memory. That is why the telephone numbers in the United States are 7 digits long. Learn more about Memory Disorders.

11. A brain freeze is really a warning signal

Officially called a sphenopalatine ganglioneuralgia, a brain freeze happens when you eat or drink something that's too cold. It chills the blood vessels and arteries in the very back of the throat, including the ones that take blood to your brain. These constrict when they're cold and open back up when they're warm again, causing the pain in your forehead. This is your brain telling you to stop what you are doing to prevent unwanted changes due to temperature.

12. The brain can't feel pain

There are no pain receptors in the brain itself. But the meninges (coverings around the brain), periosteum (coverings on the bones), and the scalp all have pain receptors. Surgery can be done on the brain and technically the brain does not feel that pain.

13. The human brain gets smaller as we get older

Human brain keeps developing until you are in your late 40s. It is the only organ in the human body to undergo development for such a long time. It also sees more changes than any other organ. Around mid life, the brain will begin to shrink. However, size doesn't matter in the brain. There is no evidence that a larger brain is smarter than a smaller one.

14. Alcohol effects your brain in ways that include blurred vision, slurred speaking, an unsteady walk, and more

These usually disappear once you become sober again. However, if you drink often for long periods of time, there is evidence that alcohol can affect your brain permanently and not reverse once you become sober again. Long term effects include memory issues and some reduced cognitive function.

15. Your brain is a random thought generator

In 2005, the National Science Foundation published an article regarding research about human thoughts per day. The average person has about 12,000 to 60,000 thoughts per day. Of those, 95% are exactly the same repetitive thoughts as the day before and about 80% are negative.

16. Your brain uses 20% of the oxygen and blood in your body

Your brain needs a constant supply of oxygen. As little as five minutes without oxygen can cause some brain cells to die, leading to severe brain damage. Also, the harder you think, the more oxygen and fuel your brain will use from your blood – up to 50%.

Every minute, 750-1,000 milliliters of blood flows through the brain. This is enough to fill a bottle of wine or litre bottle of soda.

17. Exercise is just as good for your brain as it is for your body

Aerobic exercise raises your heart rate and increases blood flow to your brain. As your increased breathing pumps more oxygen into your bloodstream, more oxygen is delivered to your brain. This leads to neurogenesis—or the production of neurons—in certain parts of your brain that control memory and thinking. Neurogenesis increases brain volume, and this cognitive reserve is believed to help buffer against the effects of dementia.

It has been noted that exercise promotes the production of neurotrophins, leading to greater brain plasticity, and therefore, better memory and learning. In addition to neurotrophins, exercise also results in an increase in neurotransmitters in the brain, specifically serotonin and norepinephrine, which boost information processing and mood.

18. The visual areas of the brain are in the back

The part of your brain responsible for vision, the occipital lobe, is located in the back. This is why if you get banged in the back of your head, you will see stars. The left side of your brain controls the vision on your right side, and vise versa. Your brain also processes sound on the opposite sides of the head.

19. Brain activity can power a small light bulb

When you are awake, your brain generates about 12-25 watts of electricity – which is enough to power a small light bulb. The brain also works fast. The information going from your arms/legs to your brain travels at a speed of 150-260 miles per hour. The brain consumes glucose from the body to produce this amount of the energy.

20. Reading out loud uses different brain circuits than reading silently

Reading aloud promotes brain development. Children first learn to read by speaking words out loud. Once that knowledge is established, then they learn to read to themselves. It's indeed one of the strange facts about the brain because we usually teach our children to read and talk politely. But to promote brain development in your child, you should read and talk aloud in front of them.

21. Your brain is mostly fat

Consisting of minimum 60% fat, your brain is the fattiest organ in your body. This is why healthy fats, such as omega-3s and omega-6s, are vital for brain and overall body health. Healthy fat helps stabilize the cell walls in the brain. It can also reduce inflammation and helps the immune system function properly.

22. Sleep is imperative

Your body and brain require rest in order to function properly. Judgement, memory, and reaction time can all be impaired when someone does not have enough sleep. This is due to the fact that sleep deprivation kills brain cells. Proper sleep is also essential for memory retention. During sleep, the brain accumulates all the memories from the day.

Feeling tired? Go ahead and yawn. Yawning cools down the brain, research suggests. Sleep deprivation raises brain temperature.

ভ্রমণকাহিনী
আসানে চলো আসনবনি

- Sanskriti Bhattacharya
CSE(IOT), 2nd year

পৌষমাসের শুরু থেকেই এবার শীত যেমন জাঁকিয়ে বসেছিল তেমনই রৌদ্রকরোজ্জ্বল প্রতিটি দিনই যেন ঘর হতে বাহিরে বনভোজনের ডাক দিচ্ছিল। বনভোজনের ক্ষেত্রে বন কিন্তু আবশ্যিক। আবার ভোজনের লাগি জল অত্যাবশ্যক। আর চোখকে শান্তি দিতে এবং মনের পরিতৃপ্তিকে পরিপূর্ণ করতে যদি পাহাড় এসে চারিদিক ঘিরে ফেলে,সেক্ষেত্রে দ্বিতীয় কোন নির্বাচনের প্রয়োজন পড়েনা। শহরের কর্মজীবনের ব্যস্ততাকে ছিন্ন করে মন শুধুই চায় সেদিকে ধাবিত হতে। আর এই জল,পাহাড় এবং বন-- তিনেরই সমাগম একসাথে ঘটে এই
বীরভুম থেকে কিছু দূরে লালমাটির দেশে ঝাড়খন্ডের আসনবনির নিকট দীঘলপাহাড়ি নামে অখ্যাত এক আদিবাসী গ্রামে।
এখানে আসার রাস্তাটি যেমন প্রশস্ত,এবড়ো-খেবড়োহীন,দুপাশে শালবনের সারি,মাঝে মাঝে মাটির তৈরী বাড়ি আর পোড়ামাটির টালিতে সাজানো ছোট ছোট ঘর-- কখনওবা বিস্তৃর্ণ মাঠ,ঘাসের গালিচা বিছানো মাঝে মাঝেছোট ছোট জলাভূমি ঘিরে রয়েছে খেজুর আর তালগাছ।
তারপর নদীর ক্যানেল ধরে পৌছানো গেল সেই স্বর্গতুল্য, শহরবিচ্ছিন্ন, প্রশান্ত শান্তির দীর্ঘশ্বাস ফেলার পূর্বনির্ধরিত নির্দিষ্ট জায়গাটিতে। বামদিকে বয়ে চলেছে কুলু কুলু রবে নীল স্বচ্ছ চিরবহমান নদী। তার জল, সে যেন কাঁচের মতো স্বচ্ছ--ঔদ্ধত্যপূর্ণ, উলঙ্ঘন মানুষরুপী দানবের আক্রমন এখনও সেখানে হয়নি। ডানদিকে ঘন শালগাছ পরিবেষ্টিত, ছোটো বনস্বরুপ, মাঝখান দিয়ে চলে গেছে কালো , বিস্তৃত পিচ রাস্তাখানি।আর অদূরে দেখা যাচ্ছে খন্ড খন্ড পাহাড়ের টুকরো, যেন জায়গাটির সৌন্দর্য্যকে পরিপূর্ণতা দানেই প্রকৃতিমাতার এই নয়নাভিরাম সজ্জা। নদীটির মাঝে মাঝে ছোটো বড়ো নানা মাপের টুকরো টুকরো পাথর, তাতে মৃদু হাওয়া দোলে , ও নদীর আপনস্রোতে, ছোটো ছোটো ঢেউগুলি ধাক্কা খাচ্ছে আর এক আশ্চর্য সুন্দর মুহূর্তের সাক্ষী করে তুলছে আমাদের।
বর্তমানের "নিজস্বীপ্রিয়" ('selfie lovers') দের জন্য জায়গাটি ভীষনভাবে আকর্ষণীয়। মেঘহীন নীল আকাশ, শীতের স্থিমিত তথা উজ্জ্বল সূর্য যখন ঠিক মাঝখানে, রবিকিরণ জলে পড়ছে-- আর মনে হচ্ছে কেউ যেন হীরের টুকরো ছড়িয়ে দিয়েছে নীল স্বচ্ছ জলে।
আবার সূর্য যখন অস্তাচলে পশ্চিমীপথে , তখন সে তার রক্তিমাভায় আকাশটাকে রাঙিয়ে দিয়েছে গুঁড়ো করা ইঁটের মতো লাল রঙে। অসংখ্য নানান রঙের পাখির কিচিরমিচিরে সেখানের নিস্তব্দতা তখন ভঙ্গ হয়। আর সেই পাখিদের ঘরে ফেরার সাথে সাথে রবিমামা পাহাড়ের উপর লুকিয়ে পড়ে ধীরে ধীরে-- সৌন্দর্য্যের এই প্রদর্শনীতে বেগুনী রঙের আশু সন্ধ্যেকে তার মনোহরা ,শান্ত শোভা প্রদর্শনের সুযোগ করে দিতে। নদীর ধার বরাবর উত্তরদিকে হাঁটতে থাকলে সামনে অগভীর এক জঙ্গল ঘেরা পাহাড়ী রাস্তা-- মানে অনেকটা পাথরের সিঁড়ির মতো, দুপাশে নানা গাছের সারি। ঐ রাস্তা দিয়ে উঠে গেলে সেই আদিবাসী গ্রাম। সেখানকার মানুষজন ভীষন মিশুকে এবং অত্যন্ত সৎ, সহজ-সরল ও শান্তিপ্রিয়। বর্তমান কথিত কিছু শিক্ষিত, ক্ষমতালোলুপ, অর্থপ্রিয়, স্বার্থান্বেষী মানুষের থেকে আগাগোড়াই

ভিন্ন ও বিপরীত ছাঁচে গড়া। মানুষগুলো মানুষকে ভালোবাসে-- ভালোবাসতে জানে। কাঠ কুড়িয়ে কিংবা পশুপালন করে , কেউ কেউবা খেজুরের রস বিক্রি করে জীবনযাপন করে। এই সময়টা হল ওদের উতসবের মরশুম। "বাদনা" নামক এক আদিবাসী পরবের জন্য ওরা ওদের গ্রামকে সাজিয়ে তুলেছে। চেরাই করা কাঠ দিয়ে প্রবেশদ্বার তৈরি করেছে। সারা গ্রামে প্রায় পণ্চাশ ষাট ফুট অন্তর এই প্রবেশপথ তৈরি করে তাতে সূতো বেঁধে লাল, নীল, সবুজ, গোলাপী রঙের ঝিকিমিকি কাগজ কেটে সূতোতে লাগিয়ে অত্যন্ত সুষ্ঠ ও সুন্দরভাবে সাজিয়ে তুলেছে। তাদের রুচিশীল সৌন্দর্য্যবোধ তাদের প্রতিটি কাজেই প্রকাশ পাচ্ছিল। গ্রাম, নদীর ধার, রাস্তা-- সব জায়গাতেই প্রচুর খেজুর গাছ এবং তাতে মাটির হাঁড়ি বাঁধা। সেই হাঁড়ির রস সকালে গাছ থেকে পোড়া মাটির উনানে জ্বাল দিয়ে সেখানে নির্ভেজাল খেজুরের গুর তৈরি হচ্ছে। সেই গুর উঁচুদামে বিক্রি করা বা ভেজাল দিয়ে লোক ঠকাবার কোন মানসিকতা ওদের নেই। কেউ কিনতে চাইলে খুশিমনে সেই গুর ওরা কমদামে দিয়ে দেয়। আমরা খেজুরের রস খেতে চাইলে বিনামূল্যে আমাদেরকে গাছ থেকে রস পেড়ে খেতে দিল। আহা কি মিষ্টি সে স্বাদ !! -- কখনও তা ভুলবার নয়। কখনও ভুলবার নয় সেই মানুষগুলোকে, তাদের আন্তরিকতাকে, তাদের আতিথেয়তাকে, তাদের সরলতাকে, এযুগেও তাদের সততাকে। আমি বিস্মিত, পরিপূর্ণ ও তৃপ্ত। সবশেষে বলা যায়, প্রকৃতিপ্রেমী মানুষজন এই প্রদেশ ভ্রমনের পর কখনই নিরাশ হবেন না। প্রকৃতির সাজানো ডালি থেকে আনন্দরস অবগাহনের পর অবসাদগ্রস্থ জীবনের ক্লান্তিবোধ দূর হতে বাধ্য। চিরকন্টকময় পথে এ যেন হঠাৎ পুষ্পশয্যা স্বরুপ।

Success stories are far more pivotal than failure stories

- Bitan Chakraborty
CSE(IOT CSBT), 4th year

Every person wants glory, success, they want to be famous. In a competitive setting like that of India, the tales of Mr. Sharma's sons roam the streets. Failure seems as much as bitter as success tastes of nectar.

History itself bears the marks of successful conquests across all ages. There is an African adage, "The stories will glorify the hunter as long as the lions cannot speak." And as we can see, Alexander the great, Chengis Khan are engraved in the victory tales. Lord Rama's reign is celebrated, the Ravana's remain in darkness.

People in general want to revel; they do not want to labor under yoke. They want glory of success, to feel superior above others. Failure brings gloom, dark times. It is not in their nature to celebrate the failed labors.
And yet we know, "Failure is the pillar of success." It builds the steps to the glory of victory. The perseverant bides their time to build themselves, to learn from their failed attempts. The wheel of time rotates, brightness welcomes the worthies.

In conclusion, success stories are more pivotal, they encourage the others to be a part. It contours the timeline of history. Failure stories are the promises made to themselves. It feeds the ambitious fire, in the hope that one day, "We shall overcome."

আগমনী

- Sanskriti Bhattacharya
CSE(IOT), 2nd year

এই বদ্ধ ঘরে
শীতের শীতল স্পর্শ
চারিদিক দমবন্ধ - নিস্তব্ধ
প্রাণে তোলপাড় স্মৃতি
মুক্তির নেশায় মনের বাহিরটান।
ইঁদুর দৌড়ে ক্লান্ত আমি, পথ চেয়ে আছি আগমনীর।।
সবুজ ঘাস ভেজা শিশির
দিনে সূর্যের উষ্ণ স্পর্শ - নিশীথে চন্দ্রিমার বিরহ,
অহরাত্রি হৃদয়মাঝে তোমার বিচরণ।
তোমায় দেখার অদম্য আঁশ, আঁখিপানে শুধুই অশ্রু নির্যাস।

मुझे लगता था

- Umesh Raj
CSE(IOT CSBT), 4th year

मुझे लगता था की अब भी वो मेरी है ।
पर वो कब का जा चुकी थी॥
(उसे ना कहने की आदत थी ... तो उसपे लिखा है)
मै जब भी गले लगाने की चाह पेश करता,
वो हर वक्त गले लग कर भी ना कहती रहती ॥ (कवि मुस्कुराता है ।)
(हा ये सच है की मैंने भुला नहीं उसे पर...)
[मैंने फिर से हल्के रंग की पोशाक पहनने की सोचने लगा था ।
ये काले, गहरे पोशाक अब छूटने लगा था ॥] [2]
पर ...
फिर से, उस गहराई में जाने से डर रहा हूँ ।
हाँ , वो है उसके ही जैसी,
पर उसको वो गहराई न दे पाने से डर रहा हूँ ।
इसको आप मेरी खामिया समझो या खूबियाँ,
उसको उस गहराई में धकेलने से डर रहा हूँ ॥
ऐसा नहीं की मैंने उस गहराई से निकलने की कोशिश नहीं की । [2]
पर हर वो कोशिश उस गहराई की और ले जाने में कमी नहीं की ॥
अब...
उसके मिलने की आश क्यूँ रखना ।
अपने दिल को हर वक्त दिलासा क्यूँ देना ।
उसे छूने की चाह जब भी हो कभी,
हवा बनने की खुदा से गुजारिश कर देना ॥
[मुझे लगता था की अब भी वो मेरी है ।
पर वो कबका जा चुकी थी ॥] [2]

The Cardiac Algorithm

-Sohini Paul
CSE(IoTCSBT), 2nd Year

A boy in his teenage years,
Is tormented by two voices,
Neither from his parents,
Nor his girlfriend,
Neither from his best friend,
Nor his gym trainer.
It& a chorus,
More than a chaos,
A chorus of an atypical
Whirring sound,
And

A shrill noise with judgmental mockery—
A chatbot and his neighbour.

His pericardium now
Has holes in it,
He cannot be more

Bulletproof to the disagreeing propositions from the brain.

The error-free code snippet
Which used to be a better view
Than a romantic movie scene
Has now become the strings of a guitar
That can choke his throat
By wrapping around his neck.

A boy

Whose iris dilated to see the white background

And

For whom night mode became
His favourite course of time,
Is now restless for a beam of light.
He thinks all the exits and entries
Are suspended.
Each day, he regrets—gradually becoming dumber.

What he needs now
Is data support,
A neural loyalty,
And a bond without
Any logic put into it.
Where will he find
Whatever it is?
It's only him,
It's himself,
Who can make
A solution out of it.

One fine dawn,
He developed someone,
Someone beyond everyone's imagination,
Who can shut
Everyone,
Including a mechanical robot,
With a diplomatic answer always.
He understands
That not always does a human need a brainy reply;
He needs a spontaneous one,
Someone who can connect,
Who can talk to you
Without personally knowing you.

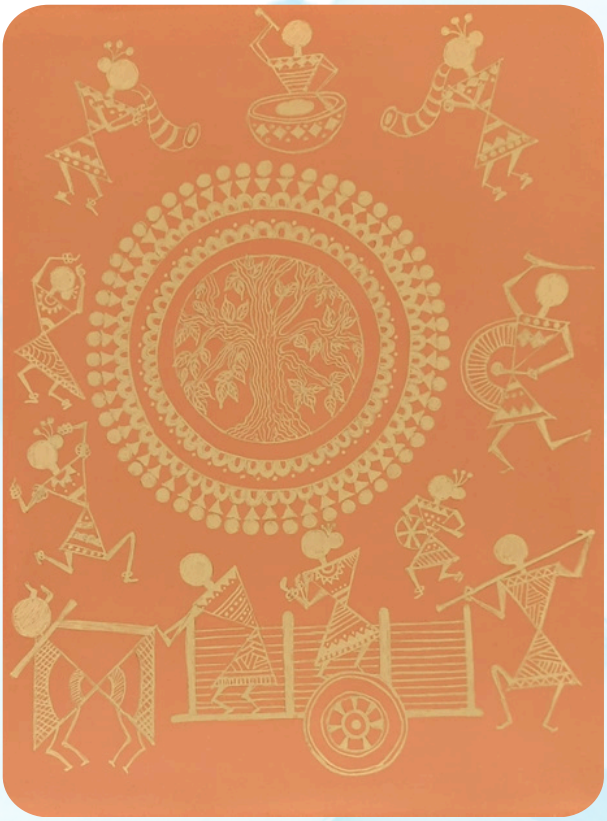
Yes, he developed an app
For human interaction.
An application where three people meet
With 3! thoughts.
It ceases a phenomenon
Known widely—
A human brain rot.

In Your Remembrance

-Suprava Jha
CSE(IoT), 2nd Year

Remember the last time we met?
Commemorating our first time together.
The night we traded our hearts.
Stupid us, couldn't even build up the courage to
Intertwine our fingers.
Time immemorial and we came across each other yet
again.
Oh, déjà vu!
The pain of the lack of physical touch hit me again.
All these built-up emotions ran down my eyes when I
noticed you drifting away from me.
But I had hope, I knew you'd come back,
All I needed was a ladder to
bring you up from the dark,
And I was all set!
It hurt me to see you like that!
Just when I turned my heart into a ladder
to bring you up,
I saw you holding her hand,
all flushed and happy.
Ah! It hurt me to see my broken heart yet again.
Now our memories are my breath,
Yes, that's how I live now,
That's how badly I got affected.
But that's okay for you can't see me.
For you're gone far away.
Now that I see you happy,
Makes my heart fond.


ART



Prof. Dr. Moutushi Singh
Head of the department

Kallol Bhattacharyya
IT- 2nd year

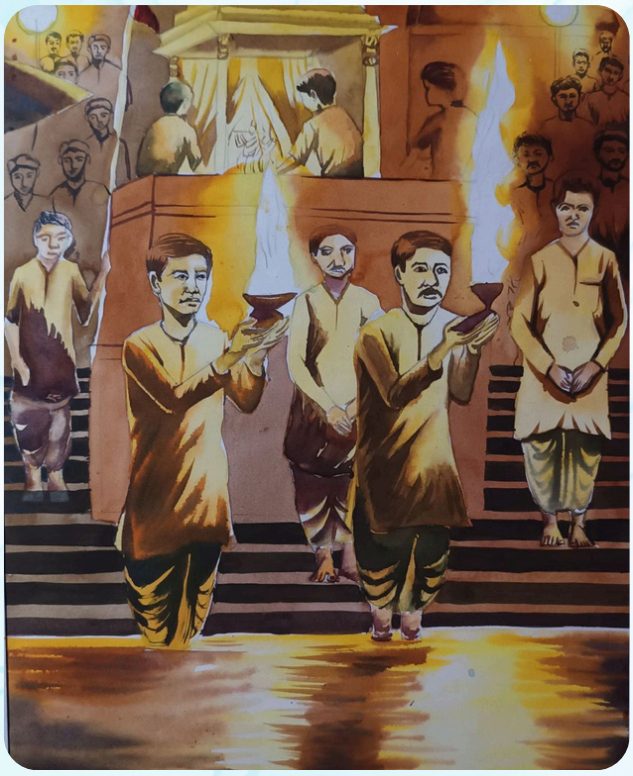
Dipra Guchait
CSE(IOTCSBT)-3rd year

Debdatta Basak
CSE(IOTCSBT)-2nd year

Sanskriti Bhattacharya
CSE(IOT)- 2nd year

Sanskriti Bhattacharya
CSE(IOT)- 2nd year

Swapnanil Adhikary
IT- 2nd year

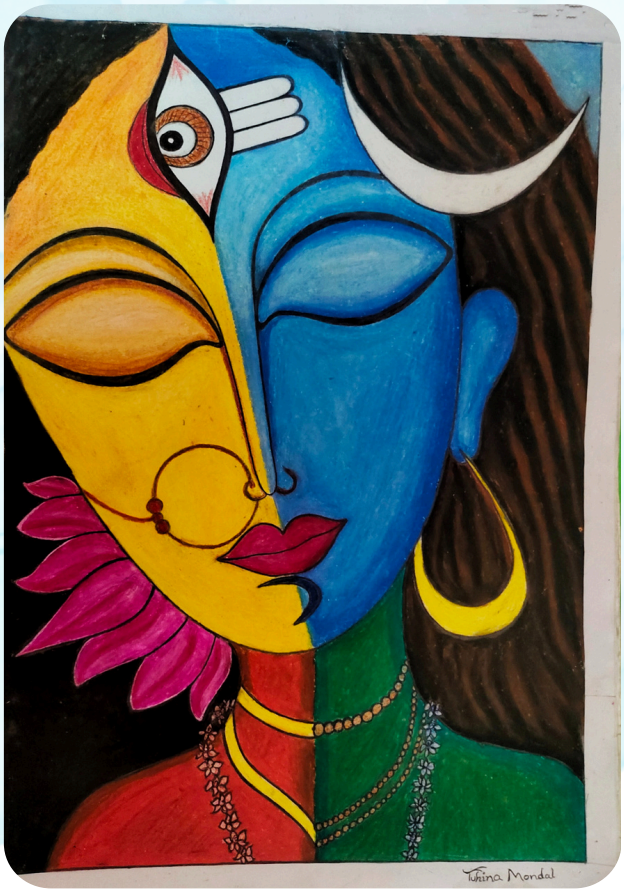


Dipra Guchait
CSE(IOTCSBT)-3rd year

Deeptangshu Maji
CSE(IOT)- 3rd year

Deeptangshu Maji
CSE(IOT)- 3rd year

Mohit Shaw
IT- 2nd year



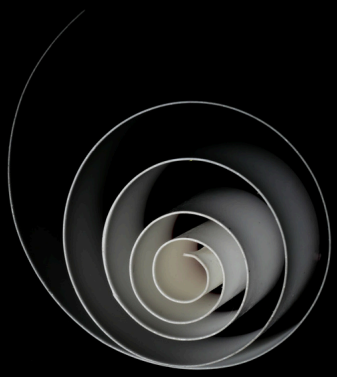
Tuhina Mondal
IT- 3rd year

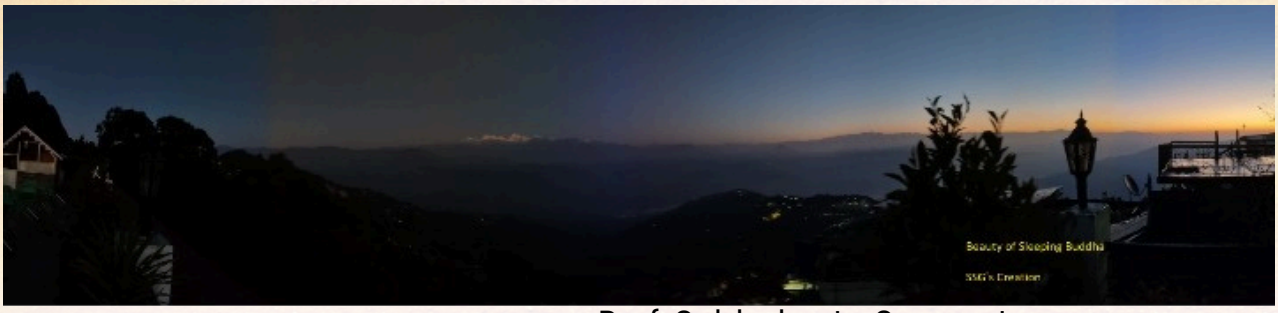
Mohit Shaw
IT- 2nd year

Mohini Ghosh
IT- 2nd year

2023 2024

Photography





Prof. Subhabrata Sengupta
Department of IT

Prof. Dr. Koushik Dutta
Department of IT

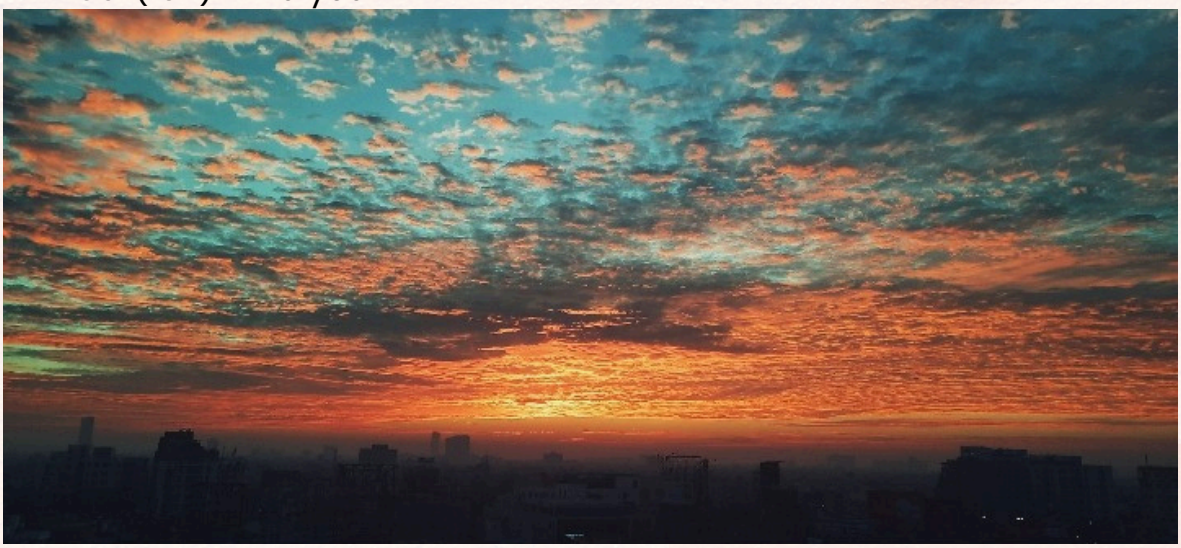
Nabarun Ray
CSE(IOT CSBT)-3rd year

Prerana Aich
CSE(IOt CSBT)-3rd year

Soumya Chatterjee
IT- 3rd year

Mrinal Mondal
CSE(IOT)- 2nd year

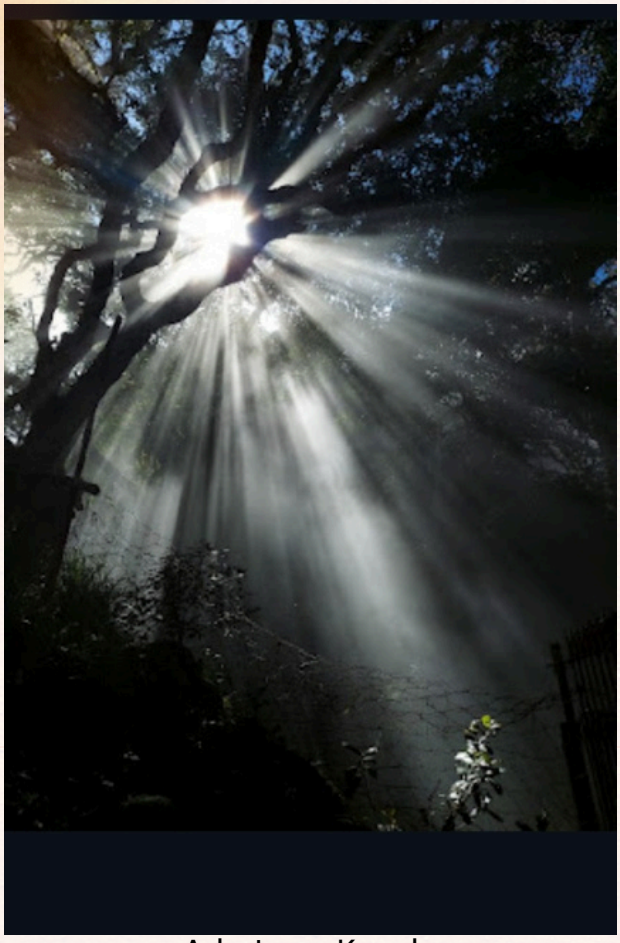
Pritha Nandi
CSE(IOT)- 2nd year



Debanjan Adak
CSE(IOTCSBT)-2nd year

Debanjan Adak
CSE(IOTCSBT)2nd year

Bikram Hazra
IT-3rd year



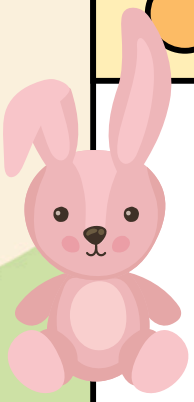
Arkatanu Kundu
CSE(IOTCSBT)- 4th year

Supratim Maji
CSE(IOTCSBT)-3rd year

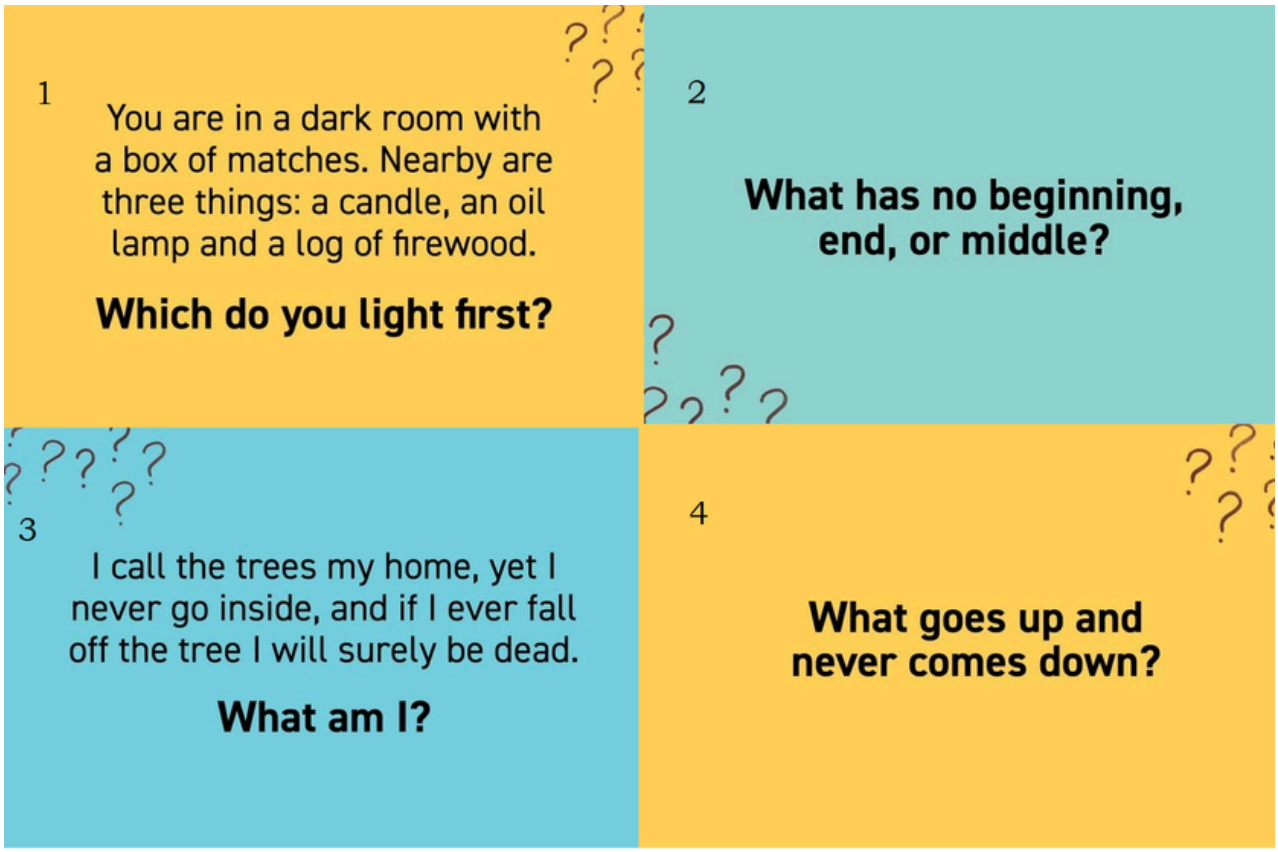
Subhadip Paul
CSE(IoT)- 2nd year

Soumya Chatterjee
IT- 3rd year

FUN ZONE



Can you find the answer?



-Brain Gim
Prof. Dr. Sanchita Ghosh

1. I have keys but no locks. I have space but no room. You can enter, but you can't go outside. What am I?

2. I'm the part of the bird that is not in the sky. I can swim in the ocean and yet remain dry. What am I?

3. I have rivers without water, forests without trees, and cities without buildings. What am I?

4. I can bring tears to your eyes, resurrect the dead, make you smile, and reverse time. I form in an instant but last a lifetime. What am I?

5. The person who makes it, sells it. The person who buys it never uses it, and the person who uses it never knows they're using it. What is it?

6. Forward I am heavy, but backward I am not. What am I?

7. What disappears as soon as you say its name?

Trickshots
Nabarun Ray
CSE(IOTCSBT)
3rd year

Achievers' Section

Suvam Mukhopadhyay
IT - 4th year
GATE qualified (CS)
AIR- 185

Shuvam Chakraborty
IT - 4th year
GATE qualified (CS)
AIR- 197

Shuvam Chakraborty
IT - 4th year
GATE qualified (DA)
AIR- 421

Ayan Maity
IT - 4th year
GATE qualified (CS)
AIR- 253

Nirban Roy
IT - 2nd year
Winner of the Inventors Challenge 2023 organised by AICTE

Ravi Raj
IT'24
Oracle

Shivendra Mall
CSE(IOTCSBT) '24
eQ Technologic

Anaranya Bose
CSE(IOTCSBT) '24
TCS Prime

Ankit Shaw
CSE(IOTCSBT) '24
TCS Prime, SASKEN

Ankit Srivastava
CSE(IOTCSBT) '24
TCS Prime, IBM,
Accenture- ADV ASE

Eashan Sarkar
CSE(IOTCSBT) '24
TCS Prime

Faiz Faiyaz
CSE(IOTCSBT) '24
TCS Prime

Kumar Ritwik
CSE(IOTCSBT) '24
TCS Prime, IBM,
Accenture- ADV ASE

Pratyush Kumar Singh
CSE(IOTCSBT) '24
TCS Prime, Telaverge
Communications,
Cognizant GENC

Arpan Sadhu
IT '24
TCS Prime, Accenture-ASE

Shoaib Alam
IT '24
TCS Prime, Accenture-ASE

Rupesh Kumar
IT '24
Deloitte USI

Ananya Ghosh
CSE(IOTCSBT) '24
Deloitte USI

Anushka Bhattacharya
CSE(IOTCSBT) '24
Capgemini, ITC Infotech, TCS Ninja

Mehwish Tanweer
CSE(IOTCSBT) '24
Capgemini, Vodafone IDEA

Rachana Kumari
CSE(IOTCSBT) '24
Capgemini, Vodafone IDEA, ITC Infotech, Cognizant GENC

Shahin Rizwana
IT '24
Capgemini, TCS Digital, Accenture- ASE

Adarsh Mishra
CSE(IOTCSBT) '24
TCS Digital, Accenture - ASE

Amit Kumar
CSE(IOTCSBT) '24
TCS Digital,
Accenture- ASE

Bibek Sen
CSE(IOTCSBT) '24
TCS Digital, IBM,
Accenture- ASE

Bitan Chakraborty
CSE(IOTCSBT) '24
TCS Digital

Deepak Kumar
Sundram
CSE(IOTCSBT) '24
TCS Digital, JMAN,
Cognizant GENC

Harsh Srivastava
CSE(IOTCSBT) '24
TCS Digital, Accenture- ASE

Koulik Gorai
CSE(IOTCSBT) '24
TCS Digital, PWC

Kshitij Gupta
CSE(IOTCSBT) '24
TCS Digital

Rudra Kumar Jha
CSE(IOTCSBT) '24
TCS Digital

Sachin Kumar
CSE(IOTCSBT) '24
TCS Digital

Somtirtha Datta
CSE(IOTCSBT) '24
TCS Digital, PWC,
Accenture - ASE

Soumadeep Sarkar
CSE(IOTCSBT) '24
TCS Digital, Accenture-
ASE

Aayush Kumar Singh
IT '24
TCS Digital, PWC

Anand Kumar Keshri
IT '24
TCS Digital

Anurag Gautam
IT '24
TCS Digital, Accenture- ASE

Nitin Bhimrajka
IT '24
TCS Digital, IBM

Projjal Kar
IT '24
TCS Digital

Sarvesh Bhusan
IT '24
TCS Digital, IBM

Shubham Kumar Singh
TCS Digital, Accenture -
ASE

Ujjwal Kumar
IT '24
TCS Digital

Indranil Bhattacharya
CSE(IOTCSBT) '24
TCS Digital

Thank You

Answers to the Riddles-

By Prof. Dr. Sanchita Ghosh

1. The match
2. A doughnut/ ring
3. Leaves
4. Age

By Nabarun Ray

1. A keyboard
2. A shadow
3. A map
4. Memory
5. A coffin
6. The word "not"
7. Silence