NEWSLETTER

IEEE

KOLKATA SECTION

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Dear IEEE Kolkata Section Members, Greetings!!

It is my pleasure to present you the Quarter-3 Kolkata Section Newsletter. Quarter-3 period i.e. July to September witnessed a lot many events like the Finals of the Robotic Competition, J.C. Bose Milestone Commemorative Lecture, WIE Day celebration, R10 sponsored Conference Quality Management Workshop and like. I would also inform the members of Kolkata Section that two teams- one from IIT Guwahati and other from IEM Kolkata participated in the final round of R10 Robotic Competition held at Tokyo, Japan on the sidelines of SYWL-2024. Ms. Mousiki Kar participated in R10 HTA Impact Congress at Kuala Lumpur on 30th September and Mr. Subhamoy Chakraborty participated in R10 Industry Conclave at Kuala Lumpur on 30th September & 1st October 2024. Myself along with Prof. Sheli Sinha Chaudhuri & Ms. Sudeshna Chowdhury attended International Leadership Summit at Delhi.

J.C. Bose Milestone Commemorative Lecture was delivered by Dr. Aloknath Dey on 2nd August 2024. The event was organised in association with The Heritage Institute of Technology, Kolkata. Dignitaries like Sri. P.K. Agarwal, CEO Kalyan Bharti Trust & Prof. (Dr.) Basab Chaudhuri, Principal the Heritage Institute Of Technology, Kolkata attended the event as Chief Guest & Guest of Honour respectively. The Session was chaired by Prof. P.K. Basu. Another important event i.e. Kolkata Section LMAG organised a technical lecture on 11th July, 2024.

In the last quarter we have plans for Sir C.V. Raman milestone commemorative lecture, Kolkata Section Student Congress, Industry-Academia Engagement Workshop funded by R10 and few technical sessions. An important event in the last quarter is CALCON-2024, the flagship Kolkata Section conference is scheduled on 14th& 15th December, 2024.

I once again thank all the members for their wholehearted support and cooperation and looking forward to another interesting edition of newsletter in the third quarter. I wish to place a special thanks to the Section newsletter team for the efforts which went behind this edition. Your feedback will be of great help to us, do send us your comments to the Newsletter editor Dr. Chandi Pani at chandipani2309@gmail.com.

Sd/-
Prof. Suparna Kar Chowdhury,
Chair, Kolkata Section

IEEE Kolkata Section

1.   Sir J.C. Bose Milestone Commemorative Lecture

IEEE Kolkata Section organized the Sir J.C. Bose Milestone Commemorative Lecture on 2nd August, 2024 in association with The Heritage Institute of Technology, Kolkata at A-Building Seminar Hall of The Heritage Institute of Technology, Kolkata Campus.

The Theme of the lecture was '5G to 6G - Challenges and Way forward' and the speaker for the session was Dr. Aloknath De, former Chief Technology Officer, Samsung India.

The event started with Prof. Suparna Kar Chowdhury, Chairperson of IEEE Kolkata Section delivering the welcome address and felicitated the Chief Guest Shri. P.K. Agarwal Chief Executive Officer, Kalyan Bharati Trust, and Guest of Honour Prof. Dr. Basab Chaudhuri, Principal Heritage Institute of Technology, Kolkata and other dignitaries like Prof. P.K. Basu. In her address she dwelt on the advancement of communication technology in ushering in an era of high-speed voice communication & data transfer.

Dr. Aloknath De, spoke at length on various nitty gritties of communication technology of 6G mobile technology vis-à-vis 5G. He also dwelt at length on the evolution of 6G technology, its pros & cons and rollout in global arena particularly in India. The session was chaired by Prof. P.K. Basu, an exponent in communication technology.

More than 110 participants comprising mostly students from the host institute, YPs, WIE members of Kolkata Section and other dignitaries attended the lecture session.

Prof. Suparna Kar Chowdhury, Chairperson Kolkata Section presented mementos to the guest speaker and the session chair.

Dr. Mousiki Kar anchored the event with her regale voice

In concluding session Dr. Tridibesh Nag proposed the vote of thanks to all the dignitaries and those present in the audience.

Few photographs of the event given below:

2.   Report on IEEE R10 HTA Impact Congress 2024

The IEEE Region 10 Humanitarian Technology Ac vi es (HTA) Impact Congress was held on September 30, 2024, at Universi Teknologi Malaysia (UTM) Kuala Lumpur, Malaysia in conjunc on with the R10 Humanitarian Technology Conference (HTC) 2024. I had the privilege of a ending the Impact Congress. The event provided an excep onal pla orm to engage with R10 HTA commi ee members, SIGHT members, humanitarian technology enthusiasts, and SIGHT Chairs from across various sec ons. The Congress started off with presenta ons in the first half by Jayakrishnan MC and Hussain Mahdi which were extremely insigh ul and focused on key areas such as leadership in humanitarian projects, volunteer engagement, funding mechanisms and inspiring success stories of implemented humanitarian projects. One of the standout aspects of the Congress was the opportunity to exchange ideas and experiences with other a endees in the second half through which I gained valuable insights into how different SIGHT Groups navigate challenges and overcome them in a team brainstorming ac vity that culminated in a group presenta on. The Congress ended with a presenta on regarding R10 HTA ac vi es by Emi Yano which reinforced the no on that we are part of a much larger global effort to make

a posive impact through technology. In conclusion, the IEEE R10 HTA Impact Congress was an invaluable experience that le me energized and inspired to implement the lessons learned into my work. It was a reminder of the power of collec ve wisdom and collabora on in driving meaningful change through humanitarian technology activities.

A few snapshots of my participation in the the IEEE R10 HTA Impact Congress 2024 at UTM, Malaysia

3. IEEE Region-10 Conference Quality and Management Workshop

The IEEE Region-10 Conference Quality and Management Workshop was successfully conducted on 6th September 2024 at the Seminar Room of the Electrical Engineering Department, Jadavpur University. This event was jointly organized by the IEEE Kolkata Section and the Department of Electrical Engineering, Jadavpur University, with support from the IEEE Region-10 Conference Quality and Management Committee. The workshop brought together experts in electrical engineering and conference quality management to explore critical aspects of academic conference organization, quality control, and management strategies. It served as a platform for students, faculty members, and professionals to engage with esteemed professors and gain valuable insights into effective conference management practices. A total of 21 institutions, including IITs, NITs, and Government Engineering Colleges, participated in the program.

4. 2nd International Conference on Data Analytics and Insights (ICDAI-2024)

Techno International New Town, Kolkata in technical collaboration with IEEE Young professionals, Kolkata Section jointly organized ICDAI-2024 at Techno International New Town, Kolkata on July 25-27, 2024. The conference participants got the chance to converse with other scholars, researchers, and practitioners about various aspects of theory, development, applications, and experiences on Data Science and Analytics. The purpose of the conference was to better understand the role of interdisciplinary concerns and how engineering was developing day by day to create technology that was friendly to humans. The conference served as a forum for presenting important research and literature from the engineering and technology fields, particularly in the areas of Data Science and insights. Leading professionals shared their knowledge, offer advice, and respond to participants' queries and worries during this conference.

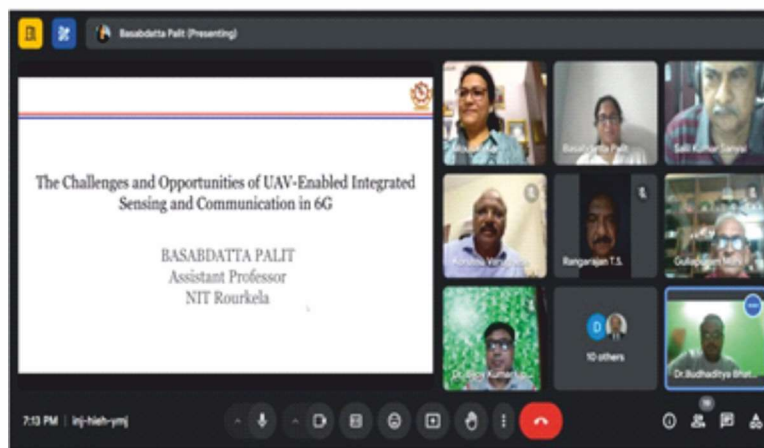The primary goals of the Conference were to:

·   Promote research relationships between the universities and the industry by presenting the current field research.

·   Review current and upcoming trends for the following several years with the attendees.

·   Educating the audience on the necessity for additional research and development in the area and, consequently, the expanding demand for IT security.

·   Give the delegates a chance to directly exchange innovative thoughts and application experiences.
    All accepted papers will be published in the Springer Nature **LNNS Book Series (SCOPUS indexed)**.

Inauguration of the ICDAI-2024

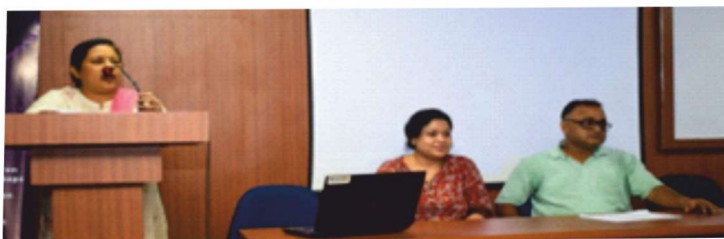## 5. The Challenges and Opportunities of UAV-Enabled Integrated Sensing and Communication in 6G

IEEE LMAG India and IEEE LMAG Kolkata Section organized a technical talk on "The Challenges and Opportunities of UAV-Enabled Integrated Sensing and Communication in 6G" on 11.7.24 in online mode. The 6G standard envisages an integration of communication and sensing capabilities to boost spectrum efficiency and network performance while exploring novel applications. In this aspect, Integrated Sensing and Communication (ISAC) for Unmanned Aerial Vehicle (UAV) - Enabled networks has gained widespread attention. UAVs can be used to provide pervasive communication coverage while also enhancing sensing accuracy and gain. However, UAVs are limited by their size, weight, mobility, LoS channels, and power constraints. On the other hand, ISAC load can reduce the independent communication load and sensing load of UAVs, thereby contributing towards improved flexibility. This talk focuses on how symbiosis can be effectuated to improve ISAC using UAVs and UAV-Enabled network performance using ISAC. It shall also deeply delve into communication-assisted sensing and sensing-assisted communication technologies from the UAV perspective. Technical emphasis would be stressed on Digital Twins, Immersive Cloud Computing, Holographic Communication with ultra-low latency, application of AI in the protocol stack, Reconfigurable Intelligent Surface, Ultra-massive MIMO, and Orbital Angular Momentum. The speaker was the Dr. Basabdatta Palit, Assistant Professor, Deptt. of ECE, NIT Rourkela and a total of 26 participants were present in the program.

Some participants in the online LMAG Program held on 11.07.2024

6. ELEVATE

ELEVATE 2024 , organized by IEEE IEM CASS Kolkata Section , IEEE IEM SB along with all other IEEE IEM Student Branch Chapter, on 21st and 22nd July 2024 at IEM Gurukul Campus Kolkata. This initiative focuses on highlighting different types of AI or ELECTRONICS-based technologies through some tech talks and hands-on workshops. In a symbolic act of growth and collaboration, the esteemed professors collectively planted saplings, representing the nurturing of knowledge, innovation, and partnership. The ceremony continued with a series of compelling speeches, each speaker offering profound insights on the importance of embracing challenges, fostering creativity, and cultivating a culture of excellence. The inauguration of "ELEVATE" thus marked the commencement of a transformative journey, setting a new benchmark for future endeavors. The inaguration of the event has been conducted in presence of Dr. Satyajit Chakrabarty ,Director of IEM UEM group , Snehasis Banerjee, Lead Research Scientist at TCS Research, Tata Consultancy Services, Prof. Dr. Suparna Kar Chowdhury, a senior member of the IEEE Power and Energy Society, Snehasis Banerjee, Lead Research Scientist at TCS Research, Tata Consultancy Services and their wonderful inaugural lecture and the whole program has been followed by some different mind-blowing events like "Arduino Workshop ", TECH talks, Block chain workshop, etc. and finally, it highlighted the excitement of the preceding activities but also rewarded the enthusiasm and dedication of the attendees, ensuring that the closing moments of ELEVATE were as memorable and impactful as its opening. Total 300 participants are present in this program.

7. IEEE WIE Day Celebration

In celebration of the annual International WIE Day, #IEEEWIEDay, under the theme "Engaging More Women in AI and 4IR Technologies", CSE (AIML), CSBS, CoE for Advanced Communication & Intelligent Computing, IIC IEM collaboration of IEEE WIE Kolkata Section, India, was hosted a series of distinguished lectures on 8.7.24. This event aims to highlight and promote the participation of women in Artificial Intelligence (AI) and the Fourth Industrial Revolution (4IR) technologies, aligning with this year's theme, "Engaging More Women in AI and 4IR Technologies." We have had the privilege of hearing from distinguished speakers, Prof. Dr. Suparna Kar Chowdhury, chair IEEE Kolkata section, Prof. Dr. Sheli Sinha Chaudhuri, Chair of WIE IEEE Kolkata section, Prof. Dr. Debashis De, Chair of IETE Kolkata section who have shared their invaluable insights and experiences. Their contributions have undoubtedly enriched our understanding and inspired us all. The IEEE WIE Day celebration inspired our students to explore and excel in these transformative fields. The event was a grand success, with enthusiastic participation from all the attendees, participants, and WIE society members. A total 150 participants were present in this program.

Name of Speaker/Delegates present with affiliation:

1. Prof. Dr. Suparna Kar Chowdhury, Chair of IEEE Kolkata Section
2. Prof. Dr. Sheli Sinha Chaudhuri, Chair of WIE IEEE Kolkata Section
3. Prof. Dr. Debashis De, Former Chair of IETE Kolkata Section

8. IEEE WIE Day Celebration Event – Jadavpur University

Name of the Event: Addressing environmental concerns in the age of 4th industrial revolution

Date and Venue of Event: July 10, 2024, 5 pm at Jadavpur University, Kolkata, India

Short Description of the Event (100 to 150 words): The WIE Day celebration at Jadavpur University, organized by IEEE WIE, an affinity group of the IEEE Kolkata section, featured a plantation drive in the university campus by the WIE members of ETCE Department, assisted by the scholars and students of the department. This initiative aimed to enhance the green cover of Jadavpur University, contributing to a healthier environment and promoting sustainable practices among the university community. As our society today is the most prosperous and dynamic the world has ever created, our Earth system is under unprecedented stress. We frequently hear of studies and warnings on species extinction rates, deforestation, our nitrogen cycle, weather catastrophe losses and more. Amplifying all of the above is climate change and the growing risk as the Earth warms of crossing critical tipping points where major changes to the Earth system are triggered. Our tree planting drive is a small step towards a greener environment and to equip our students to make the right choices in life besides building successful careers in the domain of 4IR technologies which cut across digital, physical and biological domains.

Name of Delegates Present with Affiliation:

1. Prof. Manotosh Biswas, Head, Department of Electronics and Telecommunication Engineering, Jadavpur University, Kolkata, India
2. Prof. Sheli Sinha Chaudhuri, Department of Electronics and Telecommunication Engineering, Jadavpur University, Chair WIE
3. Prof. Sudipta Chattopadhyay, Department of Electronics and Telecommunication Engineering, Jadavpur University, Senior member IEEE
4. Prof. Sayan Chatterjee, Department of Electronics and Telecommunication Engineering, Jadavpur University, Senior member IEEE
5. Dr. Chandrima Mondal, Department of Electronics and Telecommunication Engineering, Jadavpur University, Senior member IEEE
6. Dr. Pratyusha Rakshit, Department of Electronics and Telecommunication Engineering, Jadavpur University, Secretary WIE

No. of Total Participants: 30
No. of IEEE Member Participated: 10
No. of Non-IEEE Member Participated: 20

Addressing environmental concerns in the age of 4th industrial revolution for WIE Day Celebration at Jadavpur University, Kolkata, India

https://events.vtools.ieee.org/tego_/event/manage/428928

9. WIE program in AISC 2024

Event Name: International Conference on Artificial Intelligence & Sustainable Computing (AISC 2024)

Date and Venue: July 11-13, 2024, On July 11, the inaugural session was held at B P Poddar Institute of Management and Technology, the conference was held on July 12-13 at Software Technology Park, STPI Kolkata.

Short Description: International Conference on Artificial Intelligence & Sustainable Computing (AISC 2024) was organized by Department of Information Technology, B. P. Poddar Institute of Management & Technology, Kolkata and A. K. Choudhury School of Information Technology, University of Calcutta on July 11-13, 2024.

The conference was technically sponsored by IEEE Kolkata section and the proceedings of the conference will be published by Springer in the "Information and Communication Technologies" series. There has been a submission of more than 230 papers, among that 66 papers have been accepted.

On July 11, the inaugural session was held at B P Poddar Institute of Management and Technology. Prof. Bimal Kumar Roy, ISI Kolkata was the chief guest and he delivered a tutorial lecture on Some aspects of Algorithms for Data Science. Dr. Gitosree Khan, BPPIMT hosted the session. Jibendu Mazumder, Director, Cognizant Technology Solutions, Arijit Mukherjee, Principal Scientist, TCS Research and Dr. Saptarsi Goswami Bangabasi Morning College delivered insightful lectures at the tutorial session.

An IEEE membership development drive was organised by Dr. Shila Ghosh, Chair, Membership drive committee, and WIE member, IEEE Kolkata section; it was followed by a session by IEEE WIE. Prof. Shila Ghosh delivered a lecture on the various activities of WIE, Kolkata section on July 11, 2024

The conference was held on July 12-13 at Software Technology Park, STPI Kolkata. On July 12, there was an inaugural session. Prof. Dr. Sutapa Mukherjee, Principal, BPPIMT and Chairperson, AISC 2024, Prof. Amlan Chakraborti, Director, AKCSIT and General Chair of AISC 2024, Aditya Kr Sinha Director at C-DAC Patna, Shri Sanjay Kumar Das, W.B.C.S (Exe.), Managing Director, Shri Manjit Nayek, Director, STPI, Prof. Bimal Roy, ISI Kolkata, Prof. Partha Pratim Das, IIT Kharagpur, Assoc Prof Anupam Chattopadhyay, NTU, Singapore, Prof. Lau Sian Lun, Sunway University, Dr. Soumya Sen, AKCSIT, Dr. Gitosree Khan, BPPIMT, Program Chairs, AISC 2024 Malaysia inaugurated the conference by lighting a lamp. The session was hosted by Dr. Sabnam Sengupta, General Chair, AISC 2024 and Head, Department of Information Technology, BPPIMT.

Name of Speaker/Delegates Present with Affiliation:

Prof. Bimal Kumar Roy, ISI Kolkata
Jibendu Mazumder, Director, Cognizant Technology Solutions
Arijit Mukherjee, Principal Scientist, TCS Research
Dr. Saptarsi Goswami Bangabasi Morning College
Aditya Kr Sinha Director at C-DAC Patna
Shri Sanjay Kumar Das, W.B.C.S (Exe.), Managing Director
Shri Manjit Nayek, Director, STPI
Prof. Partha Pratim Das, IIT Kharagpur
Prof Anupam Chattopadhyay, NTU, Singapore
Prof. Lau Sian Lun, Sunway University
Prof. Kenneth W. Regan, University at Buffalo (Online)
Prof. Nandini Mukherjee, Jadavpur University
Prof. Tino Cortesi, Università Ca' Fioscari Venezia
Kamiya Khatter, Springer India
Prof. Sankhayan Choudhury, University of Calcutta
Prof. Rituparna Chaki, University of Calcutta
Dr. Sunirmal Khatua, University of Calcutta
Dr. Anshuman Banerjee, ISI Kolkata
Dr. Punyasha Chatterjee, Jadavpur University (WIE Execomm Member)
Dr. Suparna Biswas, MAKAUT
Dr. Anirban Mukhopadhyay, Kalyani University
Dr. Subhrojyoti Bhowmik, Peerless Hospital
Mr. Susanta Sinha, TCS
No. of Total Participant: 145
No. of IEEE Member participated: 25
No. of Non-IEEE Member participated: 120

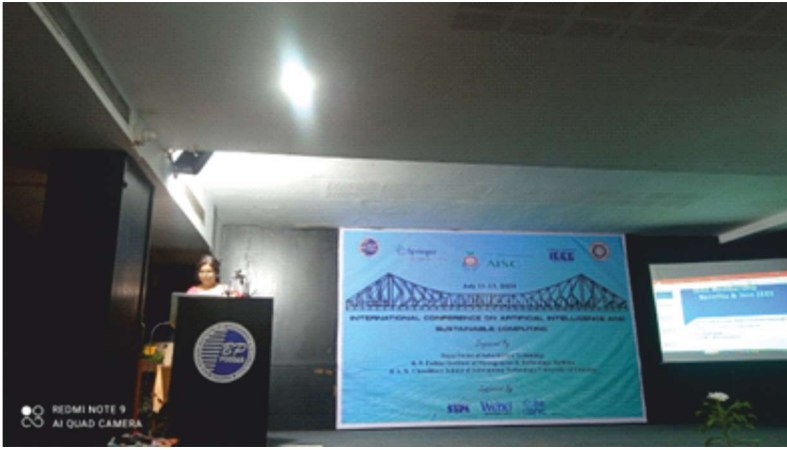**Clear Image/Photograph of the Event with Proper Caption:**

Fig. Prof. Shila Ghosh presenting the WIE IEEE Kolkata section activities for the year 2023

Fig. Participants of the WIE event

Fig. 1: WIE Chair and Vice-Chair attending the inauguration session of ICDAI 2024, Kolkata

Fig. 2: Inauguration session of ICDAI 2024, July 26, 2024, Kolkata

Fig. 3: elicitation of WIE Chair for acting as session chair in the session technically sponsored by WIE on July 27, 2024.

11. Participation in Delhi ILS 2024 Event

Name of the Event: International Leadership Summit 2024, oragnized by WIE, IEEE Delhi Section

Date and Venue of Event: August 10-11, 2024, Habitat Centre, New Delhi

Short Description of the Event (100 to 150 words): WIE members of IEEE Delhi Section organized the International Leadership summit where various women successful in their respective fields were invited to present their experiences of their professional journey to inspire future leaders to move ahead and achieve their dreams. The event was attended by WIE members, student members, young professionals, not only from the Delhi section but also from the Kolkata section, Hyderabad section, Pune Section, UP section, and many more. The 2 day program included panel discussions, membership drive, networking and cultural programs too. It was very enriching to listen to the various speakers and the panel discussions.

Name of Speaker/Delegates Present with Affiliation:

1. Dr. Tanu Jain (Ex-Civil Servant (2015 Batch) & Founder Tathastu ICS)
2. Prof. Celia Shahnaz (IEEE WIE Committee Chair) Virtual Mode
3. Mr. Deepak Mathur (2024 IEEE Vice President -MGA, R10) on IEEE Member and Geographical Activities
4. Dr. Takako Hashimoto (IEEE R10 Director 2023-24 , Vice President, Professor, Chiba University of Commerce)
5. Dr. Preeti Bajaj (Vice Chair, Member Activities, IEEE R10 and Director General, KITES Gp of Institution) on Sustainability
6. Ms. Neerja Mathur, Former Member, JERC and Former Chairperson, Central Electricity Authority (India)
7. Prof Surubhi Goyal, Director, Behavioural skills organization on Great Leadership starts with Self Leadership
8. Dr. Ravleen Kaur (Director, Cyber& IT Risk (Cyber)) on Cyber Threat
9. Dr. Ritu Kochchar (Creative Head- Prerit Design Academy) on Creative Design Profession
10. Dr. Sadhana Attavar (Vice Chair, HTB India Council, IEEE India Council ILS Sub-Committee Chair IEEE Women in Engineering) on MOVE INDIA
11. Dr. Agnes Irwanti (Vice Chair, Indonesia Section, Chair IEEE Region 10 WIE 2024 IEEE WIE R10 Director) on Diversity & Leader ship in STEM
12. Plenary Talk - Dr. Mini Shaji Thomas (Prof. Deparament of Electrical Engineering, Jamia Millia Islamia) on Women Social Cause
13. Dr. Sudeshna Choudhury, WIE Kolkata Section and Dr. Jyoti on Digital Water India Sub-Group under the Digital Water Program Steering Committee of the IWA
14. Mr. Bhupendra Gupta, VP Electronics

No. of Total Participants: 150
No. of IEEE Member Participated: 140
No. of Non-IEEE Member Participated: 10
Clear Image/Photograph of the Event with Proper Caption:

The poster for the Delhi ILS Summit..

IEEE Kolkata Section was one of the sponsors.

Representatives from WIE and Chair, IEEE Kolkata Section

12. IEEE R10 DEI Grant sponsored event: School children for IoT-based Accessible and Inclusive Environment Creation

Date and venue of Event: 22.07.2024, Sirakole Girls's High School, SIrakole, South 24 Parganas, West Bengal, India

The IEEE WIE Kolkata Section organized an event titled "School Children for IoT-based Accessible and Inclusive Environment Creation," aiming to empower young students to develop IoT solutions that enhance accessibility and inclusivity. This event brought together over 50 students to participate in hands-on workshops, expert sessions, and Introduction to IoT projects. The students learned the basics of IoT, sensors, and microcontrollers, and were guided by scholars and academicians. At the end of the event, a kit consisting of an excise copy, pen, and a motivated storybook was handed over to school students. Through this initiative, students gained valuable technical skills and a heightened awareness of the importance of inclusive technology, fostering a spirit of social responsibility and community engagement. The event was a grand success, with enthusiastic participation from all the attendees, participants, and WIE society members.

13. International Webinar on LiFi Technology

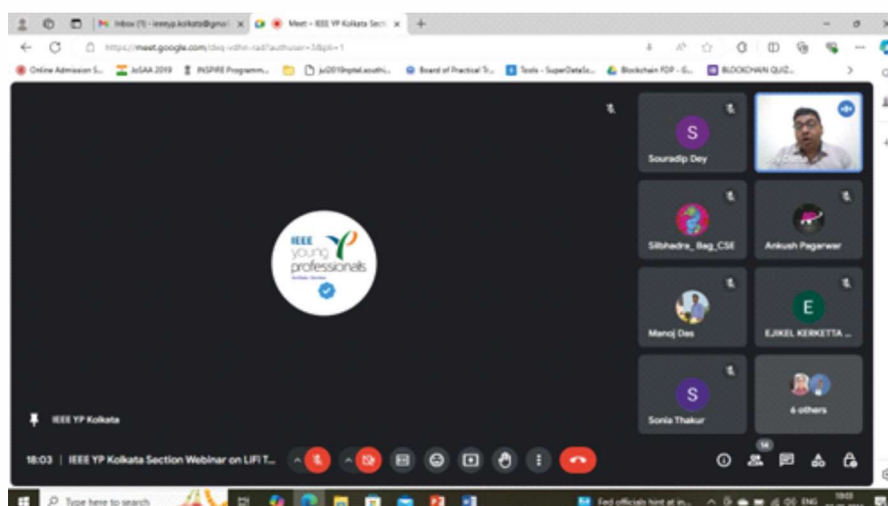**Date and venue of Event:** 7th September, 2024 in Online Mode

Short description of the event (100 to 150 words): IEEE Young Professionals, Kolkata Section and IEEE Computer Chapter, Kolkata Section jointly organized an International Webinar on LiFi Technology. The talk was delivered by Dr. Hossien Eldeeb, Postdoctoral Researcher, Electrical Engineering Division, Department of Engineering, University of Cambridge, UK. The speaker presented the unique advantages of LiFi, including its ability to complement and enhance existing V2X communication systems, reduce latency, and improve network reliability in high-density environments. He also discussed the challenges and innovations in LiFi, its integration with 6G, and real-world applications in autonomous driving, traffic management, and beyond. Around 32 participants including 6 IEEE members joined the event. Participants are mostly research Scholars; and students of different engineering colleges and universities. The event was very much interactive. This session was chaired by Dr. Joy Dutta, Postdoctoral Fellow, Khalifa University, Abu Dhabi, United Arab Emirates.

Name of Speaker/Delegates present with affiliation: Dr. Hossien Eldeeb, Postdoctoral Researcher, Electrical Engineering Division, Department of Engineering, University of Cambridge, UK.

No. of total participants: 32

No. of IEEE member participated: 6

No. of Non-IEEE member participated: 26

14. Event information of IEEE SSCS Kolkata Chapter (July-September, 2024)

Name of the Event: One-Day Workshop on "Circuit Design using LTSPICE".

Date and venue of Event: 31st July, 2024, MCKV Institute of Engineering

Short description of the event (100 to 150 words):

IEEE SSCS, Kolkata Chapter has organized a One-Day Workshop on "Circuit Design using LTSPICE" on 31st July, 2024 in association with Department of Electronics and Communication Engineering, MCKV Institute of Engineering (Figure 2). The aim of the workshop was the application of LTSPICE software for design of analog and digital Electronics circuits. LTSPICE is a high-performance SPICE simulation software for simulation of analog and digital circuits. Hands on Sessions were conducted for the students on design and analysis of circuits in two technical sessions of the day. Participation certificates were awarded to the participants.

Name of Speaker/Delegates present with affiliation

1. Dr. Kalyan Biswas, Assistant Professor, ECE Department
2. Mr. Subhasish Banerjee, Assistant Professor, ECE Department
3. Mrs. Mahua Raha Patra, Assistant Professor, ECE Department

No. of total participants: 36

No. of IEEE member participated: 3

No. of Non-IEEE member participated: 33

Name of the Event: Technical Talk

Date and venue of Event: 30th August, Meghnad Saha Institute of Technology (MSIT), Kolkata.

Short description of the event (100 to 150 words):

Technical Talks were organized by IEEE SSCS Kolkata chapter and IEEE ED MSIT SBC in association with Department of ECE, MSIT, Kolkata on 30th August, 2024. Lectures were delivered by Prof. (Dr.) Angsuman Sarkar and Dr. Arpan Deyasi. Prof. Angsuman Sarkar, Talked about "Nano device and beyond" and Dr. Arpan Deyasi delivered lecture on "Quantum photonics". Students and faculty members from Department of ECE, MSIT, Kolkata attended the talk.

Name of Speaker/Delegates present with affiliation

1. Dr. Angsuman Sarkar, Professor & Head of Electronics and Communication Engineering in Kalyani Government Engineering College, West Bengal
2. Dr. Arpan Deyasi, Associate Professor in the Department of Electronics and Communication Engineering in RCC Institute of Information Technology, Kolkata

No. of total participants: 30

No. of IEEE member participated: 10

No. of Non-IEEE member participated: 20

Name of the Event: Virtual Talk on Revolutionizing Hardware Design with Deep Learning HDL

Date and venue of Event: 14th September, 2024 (3PM-4PM), Virtual event (WebEx)

Short description of the event (100 to 150 words):

IEEE SSCS Kolkata Chapter has successfully organized a Virtual Talk on Revolutionizing Hardware Design with Deep Learning HDL on 14th September, 2024 (Saturday). The lecture was delivered by Dr. Indranil Hatai, Senior Application Engineer, MathWorks India.

About the Talk:

In the rapidly evolving landscape of technology, the integration of deep learning with hardware design is unlocking unprecedented opportunities for innovation and efficiency. This webinar delved into the transformative potential of Deep Learning HDL (Hardware Description Language), a cutting-edge approach that leverages deep learning to streamline and enhance hardware development processes.

Key topics include:

- An introduction to Deep Learning HDL and its role in modern hardware design.
- Case studies highlighting successful implementations and tangible benefits.
- Technical insights into the integration of deep learning models with HDL.
- Future trends and challenges in the convergence of AI and hardware design.

This webinar was designed for hardware engineers, AI researchers, and technology enthusiasts eager to harness the power of deep learning in hardware design.

Name of Speaker/Delegates present with affiliation

1. Dr. Indranil Hatai , Senior Application Engineer, MathWorks India

No. of total participants: 25

No. of IEEE member participated: 5
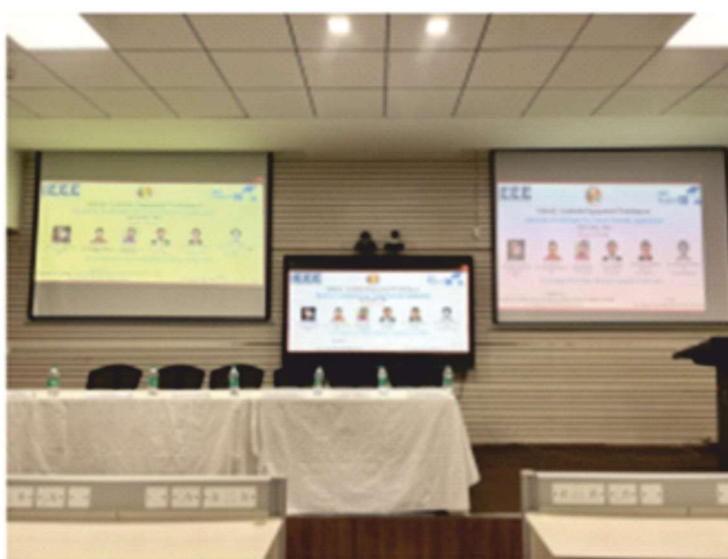
No. of Non-IEEE member participated: 20

Link:

15. Industry-Academia Engagement Workshop on Hardware Accelerators for Neural Network Applications

This program is organized by Department of Computer Science and Engineering, Indian Institute of Technology Guwahati (IITG) in Association with IEEE Kolkata Section on 05 OCTOBER, 2024.

The Department of Computer Science and Engineering of Indian Institute of Technology, Guwahati organized an Industry-Academia Engagement Workshop on Hardware Accelerators for Neural Network Applications on 5th October 2024. The workshop was organised in association with IEEE Kolkata Section and supported by Industry Relations Committee of IEEE Region 10. It was a workshop that addressed the need for the shift from traditional architectures to domain-specific designs for Neural Networks Applications.

The coordinators of this workshop were Dr. John Jose, Associate Professor at IIT Guwahati and Dr. Phrangboklang Lyngton Thangkhiew, Assistant Professor at IIT Guwahati. A total of 38 participants attended the workshop. The list of participants are in Table 1. The majority (more than 85 percent) of the students were from IIT Guwahati and comprised mostly research scholars. Few students were from IIIT Guwahati and Chandigarh University. The workshop happened at the New Seminar Hall (2nd floor) of the Dept. of CSE, IITG and began with the registration process at 9:00 AM IST.

Post registration, the inauguration function started at 9:30 AM. In the inaugu ration function, the program introduction and welcome address was given by Dr. John Jose, Associate Professor, Dept. of CSE, IIT Guwahati. The HOD remarks was given by Prof. T. Venkatsh, Professor and Head, Dept. of CSE, IIT Guwa hati. This was followed by a message from the Guest of Honor, Prof. Suparna Kar Choudhury, IEEE Kolkata Section Chairperson. Mr. Shaon Majumder, IBM Senior Solution Architect shared his message as the Guest of Honor. The inau gural address was delivered by Mr. Sanjay Kar Choudhury, IEEE R10 Industry Relations Committee Chair. Felicitation of the guests was done with a phoolan gamosa, the traditional handloom heritage of Assam. The vote of thanks for the inauguration function was delivered by Dr. P.L. Thangkhiew, Assistant Professor, IIT Guwahati.

The closure of the inauguration function was marked with a brief tea break at 10:15 AM, following which the session began at 10:45 AM.

At the outset, there was a talk titled 'Exposure to drawbacks of Conventional Architecture and Importance of Domain Specific designs and in the field of Com puter Architecture' by Mr. Shaon Majumder, Senior Solution Architect, IBM.

The talk revolved around importance of domain specific software architecture focusing on benefits and trade-offs. This was followed by a talk titled 'Energy Efficient Compaction and Data Transfer for ML Architecture' by Dr. Dipika Deb, CPU Circuit Design Engineer, Intel at 11:45 AM. The talk focused on model compaction and encoding techniques for compaction.

After the first two talks, lunch was served at the Old Seminar hall in the Dept. of CSE, IITG for all participants.

A panel discussion on 'Impact of AI in Digital World' was held post lunch, at 2:00 PM. The panelists included Dr. Dipika Deb (from Intel), Mr. Shaon Majumdar (from IBM) and Mr. Sanjay Kar Choudhury (from IEEE). The discussion was moderated by Dr. John Jose (from CSE, IITG). The discussion was really engaging with active discussion from both panelists and participants about the moral, judicial and intellectual impacts of AI in today's world.

Post the panel discussion, there was a talk titled 'Revisiting Computing Architecture for AI and ML Applications' by Dr. John Jose, Associate Professor, IIT Guwahati at 3:30 PM. The talk included architectural enhancements by taking the case study of CNNs. The final talk was delivered at 3:50 PM and was titled 'Memristive based In-Memory and Neuromorphic Computing' by Dr. P.L. Thangkhiew, Assistant Professor, IIT Guwahati. The talk was focused on emerging memory technologies and use of memristors for neural network accelerators.

The workshop was concluded with the valedictory session wherein the participa tion certificates were distributed and feedback was collected from the participants.

The feedback from all the participants were highly positive. The sessions, orga nization and hospitality were highly appreciated. Most participants demonstrated enthusiasm to attend such workshops for the future and looked forward towards them.

The resource persons were :
 Mr. Sanjay Kar Choudhury, IEEE R10 Industry Relations Committee Chair Prof. Suparna Kar Choudhury, IEEE Kolkata Section Chairperson
 Mr. Shaon Majumder, IBM Senior Solution Architect
 Dr. Dipika Deb, CPU Circuit Design Engineer, Intel
 Dr. John Jose, Associate Professor, Dept. of CSE, IIT Guwahati
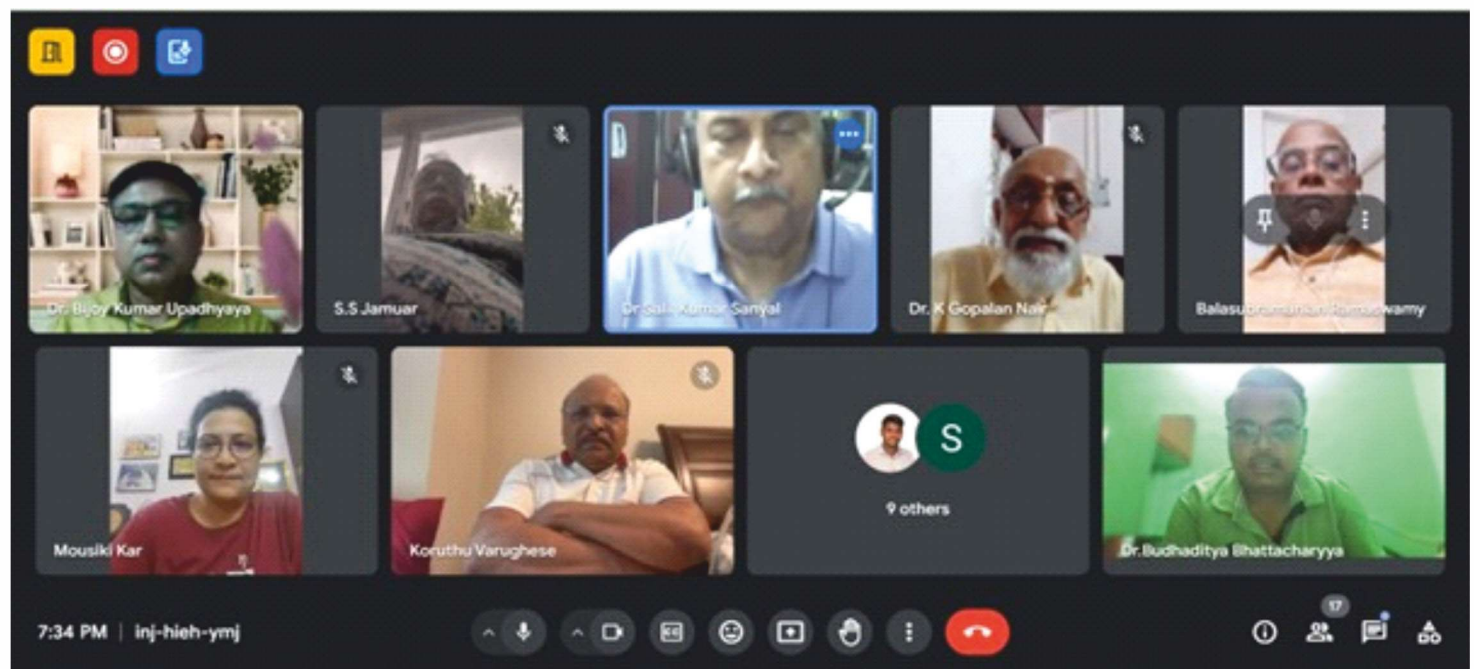 Dr. Phrangboklang Lyngton Thangkhiew, Assisstant Professor, Dept. of CSE, IIT Guwahati.

The 1st LMAG Activity of IEEE Kolkata Section was held on 25th April 2024 via online mode from 7 to 8 pm.

Prof. (Dr.) B. K. Upadhyaya, Principal in Charge of Tripura Institute of Technology, Narsingarh, West Tripura delivered a lecture on IoT in Agriculture.

19 members of IEEE and 6 guests attended the session.

Prof Upadhyay spoke on how the integration of Internet of Things (IoT) technologies into agriculture field has heralded a new era of precision farming, revolutionising traditional agricultural practices and fostering sustainable agricultural development. IoT facilitates the creation of smart farming systems by connecting physical devices embedded with sensors, actuators, and software to collect, analyse, and act upon real-time data. By harnessing the power of IoT technologies, farmers can optimise resource management, improve decision-making processes, and enhance overall farm productivity while minimising environmental impact. These insights enable informed decisions regarding crop management, pest control, and yield optimization, leading to increased productivity and profitability. Moreover, IoT enables remote monitoring and management of agricultural operations, empowering farmers to oversee their fields and livestock from anywhere at any time. Through mobile applications and web-based platforms, farmers can access real-time data on crop health, weather conditions, and equipment status, enabling proactive intervention and timely responses to potential threats or challenges. This presentation demonstrates an overview of the transformative potential of the IoT in agriculture. It highlights the challenges of the traditional agriculture system and emphasises the role of IoT in agriculture to transform the challenges into opportunities. The talk describes various components of IoT and enabling technology with respect to agricultural applications. Brief discussion is made on some potential application areas of IoT in agriculture. It presents the major benefits and challenges of IoT in agriculture. The presentation also includes a few case studies related to the IoT in agriculture.

Some participants in the online LMAG Program held on 25.04.2024