

## **I. IEEE IEM STUDENT BRANCH – Technology Awareness Program (TAP)**

**Venue: University of Engineering and Management, Kolkata**

**Date- 08 -10 September, 2017**

The IEEE Technology Awareness Program (TAP) 2017 was held at University of Engineering and Management (UEM) from 8 - 10 September, 2017. It was jointly conducted by the IEEE Computer Society India Council SAC, IEEE Kolkata Section and IEEE IEM Students' Branch, Kolkata.

The main scope of the event was to allow Student members, industry professionals and young professionals to solicit, refine and disseminate quality technical information. This was to develop a volunteer - led environment where technical thought leaders converge and create communities for people working in the fields. This project provided an opportunity for Student members, industry professionals and young professionals to become future leaders, increase IEEE membership and helped student member retention. The focus areas like technologies related to Communication, Energy, Automation, Cyber security, AR & VR, Block chain, AI & machine Learning, IoT, etc. were focused mainly.

The IEEE TAP 2017 was a 3-day event and provided the students with an opportunity to interact with the esteemed speakers and professionals from all over India. Technical talks on the currently flourishing fields were held to nurture the creative minds of the participants and open them to a new world. Thereafter on the 3rd day, the participants were allowed to sit for an MCQ-based exam which contained questions related to the talks that they attended for the first two days. 13 students were shortlisted from among the examinees who were eligible for the Personal Interview that was conducted by Mr. Shivam Saurabh and Mr. Pratik Mangalore from the IEEE Computer Society India Council SAC. The students who were further shortlisted from the interview were given an amazing chance to work under a real-world project under the guidance of Industrial Professionals.

**VISION:** Empower participants with the knowledge of modern technology and inspire them to collaborate and innovate for the future

**MISSION:** Provide participants, from every domain, a platform to showcase their talents and skills and assist them in enhancing their own skill set.

### **OBJECTIVES:**

- Networking - Forge and strengthen the network of IEEE volunteers and the participants and gain a better understanding of the organization and the opportunities available.
- Professional Development -

Hone professional and soft skills of the participants that will help them in their career.

- Technological Innovation - Talks by leading professionals to expose the delegates to the latest technologies and innovations.

- Furthering the Society - Facilitate the exchange of ideas and methods so that all the participants and Sections can implement to further the society.

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### **Opening ceremony:**

The three-day extravaganza began with the Opening Ceremony on 8th of September, 2017. The programme began with the auspicious Lighting of the Lamp ceremony blessed by the honoured presence of the Chief Guest, Mr. Sanjay Kar Chowdhury, Senior Manager in the HRD Department of CESC, our Guest of Honour, Dr. Sarmistha Neogy, Professor in the Department of Computer Science & Engineering at Jadavpur University and who is also a senior member of IEEE and IEEE Computer Society, Principal Sir of IEM, Dr. A.K. Nayak, and Director Sir of IEM, Mr. Satyajit Chakrabarti. Following the Lighting of the Lamp, the distinguished guests were introduced and felicitated in the most traditional way by our Students' Branch members. The guests then shared a few words of wisdom with the audience in attendance and enlightened us with their experience in the professional field and work.



**Talk: MR. SABYASACHI MUKHOPADHYAY**

**Topic: Application of Artificial Intelligence Tools in Early Stage Disease Detection**

The talk started with a welcome gesture of the speaker, Mr. Sabyasachi Mukhopadhyay, the Lead of Facebook Developer Circle Kolkata. He is currently exploring machine learning tools in biomedical domain and he also has expertise in signal processing and computer vision. In past, he has worked on Wind Engineering, Vertex Coloring (Graph Theory) and Nano-sciences. There are 4 patents filed in his name and he has 42 publications which includes books, journals and proceedings.

He started his speech by discussing about the optical methods of tissue characterization, which is the foremost concern when it comes to detection of diseases in the early stage with the advent of modern technology. Then he went on to describe fractals and multi-fractals and the ways of observing it in spatial refractive index fluctuations.

Later, he carried on the discussion with extraction of multi-factuality from tissue light scattering spectra and its quantification. His lecture was well received by the audience in attendance and following the conclusion of his speech, he was felicitated with a bouquet of flowers and a memento.



**Talk: DR. SUBHADIP BASU**

**Topic: Research Trends in Pattern Recognition and Image Analysis**

Dr. Subhadip Basu is highly qualified in the areas of Pattern Recognition, Bioinformatics, Bio-medical Image Analysis etc. and has published more than 150 research articles in various International Journals and Conference proceedings, co-authored six books and co-invented two US patents.

His speech began with the issue of how old manuscript writings are preserved by modern methods of Pattern Recognition. Old diaries and manuscripts of influential individuals or writers, whose writings have faded over the years, are preserved nowadays using modern scientific methods involving pattern recognition. He gave a detailed account of the research scopes in this field and how research in this field has advanced over the years. Then he moved on to Biometrics and Image Analysis, which included finger vein recognition, finger recognition, etc. The talk concluded with Dr. Subhadip Basu being felicitated with a bouquet of flowers.



**Computer Society Stall**

A stall was setup by Mr. Pratik Mangalore and Mr. Shivam to promote IEEE Computer Society (CS). The main objective was to spread awareness about the CS Society and its utility. Banners and posters promoting the same cause were also placed in order to attract a hefty amount of audience.





**Talk: DEEPIKA BR**

**Topic: CYBER SECURITY**

Deepika BR, Product Manager at CISCO Systems, conducted a very interactive session on 'CYBER SECURITY'. Validating her profound image of a charismatic speaker, Deepika BR gave a very prolific lecture on 'Cyber security and its concerns' in a much concise way. She didn't just make us aware of the crimes happening over internet but also discussed about the ways by which one can secure his/her personal information from intruders effectively. She started her talk by first classifying different types of hackers and how fatal they can be, piling up different points to ascertain the credibility of cyber security. Her main areas of concern under cyber security were social media security, malware and bots and mobile security and the terminologies related to them.

She also emphasized on encryption of data in order to prevent unauthorized users from accessing it. Finally she ended her session by talking about the preventive measures taken to ensure there is no showcase of personal data by means of privacy breach or identity theft and inspired us all to work in this field for successful eradication of cybercrime.



**Talk: Subodh Gajare**

**Topic: IoT**

On day 2, the audience was thrilled by the dynamic presence of Mr Subodh Gajare, Solutions Architect at CISCO. Speaking on his area of interest, IoT, Mr Gajare walked through the carpet, having an interactive two-way session with each one present. He linked the IoT concept with things ranging from a meagre water bottle to objects as different as a street pole. Various case studies were also presented before the sea of enthusiastic technical minds. He actually made people think, then and there. The brightest of the thinkers who came up with right solutions were awarded. The session which was supposed to last for an odd 60 minutes, lasted for 75 minutes to be exact. Mr Gajare's vibrant mindset must have inspired many to divulge in the wide world of Internet of Things.



**Talk: Shivam**

**Topic: Machine Learning**

Being the technical coordinator and representative of IEEE India Computer Society India Council SAC, he just couldn't turn down the opportunity to inspire fellow students and juniors and familiarize them with the current trends and techniques in AI, Machine Learning and autonomous Image Processing. His interaction with the students- an enthusiastic crowd of interested would-be engineers from a plethora of streams- was phenomenally two-way. Along with the information of various machine learning types, he kept the audience at the edge of the seats with captivating questions and answers that led to further insights into the matter.

He also shared with the participants the projects that he has involved himself in. Some of them being the colorization of infrared images and Automated Disease Diagnosis of Tissue Connective Disorder. The motivation for the first is to help the courageous and righteous Indian Army detect, in real time, soldiers from neighboring countries crossing the international border in the harsh climate of glaciers from neighboring while the second aims to diagnose diseases without human intervention and save countless lives in the process. Both of them, indeed, being noble causes. Before ending the session, he also divulged to us the secret of the success of AI- "Machines do not grow complacent, unlike humans."



**Talk: Manisha Biswas**  
**Abhishek Nandy**

**Topic: Machine Learning using Tensor Flow**

Day 2 of T.A.P. witnessed an interactive session between the participants and Ms Manisha Biswas, the Google Women TechMaker lead, Kolkata. To help the beginners, she was kind enough to start off with the basics of Machine Learning and later proceeded to explain the use of Tensor Flow. She even enlightened the audience with the probable areas of getting associated with Data Science.

The dais was taken over by Mr Abhishek Nandy in the next part of the session. Apart from elaborating on Tensor Flow, the Intel Innovator also spoke about the Intel workshops that are conducted across the globe as an initiative to provide undergraduates a chance to work hands-on with IoT devices. He even gave live video demos from the headquarters of Intel. This session drew attention of numerous students which was evident from the crowd that gathered around the two speakers after the session got over.



### PreIEEEExtreme

A Pre-IEEEExtreme Coding Competition was also held on the second day of the event for our young aspiring coders to showcase their coding skills and give them a preview of IEEEExtreme Coding Competition that is to be held soon. Certificates were given to those who excelled in the competition







The last day of the 3 day workshop had the scholars take the stage. Pratik, the Public Relations Officer of the IEEE Computer Society SAC, took the T.A.P. participants on a ride of the benefits of joining IEEE CS. He also made the members aware of the 3 different scholarships offered by IEEE, himself being the recipient of the REM Scholarship. The doubts regarding IEEE Xtreme participation were also solved. Having a keen interest in research himself, Pratik elaborated on the journals and paper publishing topics as well. Shivam, another REM Scholar, threw light upon the various job opportunities on getting actively associated with the Computer Society. They kept the session quite interactive, sharing their own experiences and handing out goodies at several points.



A written exam solely based on the topics covered on the first two days was taken on the third and final day of the event. The topics covered were, namely, ARTIFICIAL INTELLIGENCE, MACHINE LEARNING, CYBER SECURITY, INTERNET OF THINGS AND IMAGE PROCESSING. The Questions were multiple choice multiple correct type and evaluated the overall knowledge

gained exclusively from the lectures attended on the aforementioned topics. The test was taken under strict surveillance of our volunteers ensuring no chance of foul play. Around 280 students appeared for the test out of which only a few were shortlisted for the Personal Interview (PI) round.

The students who excelled in the written tests were selected for the personal interview round where they had to go through rigorous evaluation. Here our well qualified delegates assessed the capabilities of the selected students for doing some real time projects under well renowned company tags like Facebook, Google, Cisco and Intel. After interviewing all the selected students there came the big challenge of selecting the best people out from the lot which Mr. Shivam and Mr. Pratik Mangalore did quite efficiently and a final list was prepared and handed over to the authority in charge for further processing.

## CLOSING CEREMONY

Goodbyes are never easy. So was the case here. But the happiness of hosting such a successful event was terrific. In midst of this emotional turmoil, the 3 day event was signed off in presence of all the IEEE members, faculty in charge of the IEM IEEE Students' Branch and all the participants. But the celebration was not over yet. The participants and delegates were given certificates, the winners were announced and prizes were distributed. The volunteers and core committee members also received token of appreciation for hosting such an event and making it a great success. This marked the end of the 3 day event that not only witnessed the technical minds taking a leap of faith towards their dreams but also new found friendships from across the country and memories that one would cherish for eternity.

