Geoscience and Remote Sensing Society
2020 Annual Chapter Report

Chapter Name:
IEEE Kolkata Section,
Geoscience and Remote Sensing Society Chapter (GRS29)
Kolkata

Chapter Officers:
- Chair: Prof. Pradipta Kumar Nanda, SOA University, Odisha
- Vice-Chair: Prof. Susmita Ghosh, JU, Kolkata
  Prof. B. Uma Shankar, ISI Kolkata
- Secretary: Dr. Arijit De, Netaji Subhash Engineering College, Kolkata
- Joint Secretary: Sandip Nandi, Kalyani Government Engineering College, Kalyani
- Treasurer: Dr. Imon Mukherjee, IIIT Kalyani
- Nomination chair: Dr. Dalia Nandi, IIIT Kalyani

Reporting Period:
2020

Date Submitted:
January 11, 2021

Web Site:
- https://site.ieee.org/kolkata-grss/

Wish to be considered for Chapter Excellence Award: Yes
1. Technical Seminars Organized:

1. One Day Technical Lecture on Revolution in Society through Satellite

Date of the event: 17 February, 2020
Number of attendees: 20
Description:

On 17 February, 2020 the GRSS NSEC Student Branch Chapter in association with the department of ECE organized a technical lecture on “Revolution in Society through Satellite” at the Seminar room, ECE Dept., NSEC from 2:30 pm to 4:30 pm. Dr. Parameswar Banerjee, Former Scientist G and Deputy director of National Physics Laboratory, India and presently associated with Amity University, delivered his lecture on various aspects of communication satellite. He discussed about various mode of propagation and their applications in the field of space, aviation, and agriculture and disaster relief. Then he discussed about various aspect of satellite communication in remote sensing. Around 20 students along with the faculty members were present in the event.
2. Inauguration of Narula Institute of Technology, IEEE GRSS Student Branch Chapter under the aegis of ECE Department, followed by Technical Lecture program

Date of the event: 26th February, 2020
Number of attendees: 100
Description:

The IEEE Seminar on Inauguration of Narula Institute of Technology, IEEE GRSS Student Branch Chapter under the aegis of ECE Department, followed by Technical Lecture program was organised by IEEE GRSS Chapter, Narula Institute of technology, on 26th February, 2020. In the Official Inauguration of IEEE GRSS Student Branch Chapter Plague, ECE Department, Narula Institute of Technology. Prof. (Dr.) B.Uma Shankar, Professor, ISI, Kolkata, Vice Chairman, IEEE GRSS Kolkata Section and Prof. (Dr.) Ashish Ghosh, Professor, ISI, Kolkata, Former Chairman, IEEE GRSS Kolkata Section handed over the plague to Prof. (Dr.) M.R. Kanjilal, Principal, Narula Institute of Technology and Dr. S. Panda, HOD, ECE, Narula Institute of Technology. All the delegates delivered their speech in the Inauguration. The Speaker of the Technical Talk was Prof. (Dr.) Ashish Ghosh Professor, ISI, Kolkata, Former Chairman, IEEE GRSS Kolkata Section. The technical lecture topic was on Data Science. He delivered his lecture on the implementations of IOT in various fields. He illustrated the very basic of data science, after collecting the data via sensors. The session motivated the students of 2nd and 3rd year present there.
3. One Day Technical Lecture on Machine Learning

Date of the event: 2 March, 2020
Number of attendees: 20
Description:

On 2 March, 2020 the GRSS NSEC Student Branch Chapter in association with the department of ECE organized a technical lecture on “Machine Learning” at the Seminar room, ECE Dept., NSEC from 2:30 pm to 4:30 pm. Prof. Ashish Ghosh, Former In-Charge, Center for Soft Computing Research, and Professor & Head, Machine Intelligence Unit delivered his lecture on basics of Machine learning. He discussed about various examples. He explained very well about supervised learning and unsupervised learning and their applications in remote sensing. Around 20 students along with the faculty members were present in the event.
4. One Day Technical Lecture on Key Challenges for using Remote Sensing

Date of the event: 1 May, 2020  
Number of attendees: 30  
Description:

Invited talk on ‘Key Challenges for using Remote Sensing’ by Dr. Swastika Chakraborty, Associate Professor, Sikkim Manipal Institute of Technology. Students and faculties of Abacus engineering College and Sikkim Manipal Institute of Technology were present.

5. One Day webinar on Webinar on “General Overview of the Activity of Semiconductor Division, BEL-Bg”

Date of the event: 3rd September, 2020  
Number of attendees: 80  
Description:

The webinar on “General Overview of the Activity of Semiconductor Division, BEL-Bg” was organised by IEEE GRSS Student Chapter and Department of ECE, Narula Institute of Technology, on 3rd September, 2020. The Speaker of the Webinar was Mr. Arijit Das, Sr. Engineer at Bharat Electronics Ltd. The webinar was attended by around 80 participants. The speaker has described the System and components of Business Verticals- BEL Bg Cx. He told us about 3 types of power devices, several types of hybrid micro circuit, different MEMS. He also told us about the Clean Room Specifications like Diffusion Operations, Lithography Operations, and Assembly Operations. He told us a brief about Clean-room classifications and human body as a source of
contamination, procedure of working under Laminar flow benches in clean- room, Photoresist coater, Chemical Wet Bench with Laminar Flow station.

6. One Day Technical Lecture on Fundamentals of Universe

Date of the event: 4 October, 2020
Number of attendees: 80
Description:

On 4 October 2020 the GRSS NSEC Student Branch Chapter in association with the department of ECE organized a technical lecture on “Fundamentals of Universe” by Dr. DibyashreeSenguptain online mode from 3 pm to 4 pm. She discussed bout standard model dark matter and how universe created. Around 80 students along with the faculty members were present in the event.

2. Other Technical Activities:

1. Three Minute Thesis Competition

Date of the event: 20 October, 2020
Number of attendees: 25
Description:

Students of different engineering branches have presented new proposal for Thesis ideas in this competition. Three awards have been given to successful participants.
3. Education and Outreach:

1. International Virtual School on Application of Machine Learning and IoT in Remote Sensing (CHAPNET 2020)

   Date of the event: 4th-5th December 2020
   Number of attendees: 90
   **Online Platform:** Google Meet
   **Description:**

   In the 2020 Chapnet program, six chapters with two chapters from outside India participated in this program. These Chapters are from Singapore Section, Washington DC and Northen VA Chapter. From
India, Kolkata, Bombay, Delhi and Hyderabad Section participated in this program. Under Chapnet program a virtual International School on Application of Machine Learning and IoT in Remote Sensing was organized on Google meet platform during 4th-5th December 2020 due to the COVID-19 pandemic situation. Around 90 participants from different parts of India registered and participated in this school. There were six speakers, who delivered their lectures during these two days. Dr. Srija Chakrabarty from NASA has delivered a talk about “Feature extraction from VIIRS observations for monitoring the earth at night” while Dr Yee Hui Lee of NTU Singapore talked about “Machine learning for GPS remote sensing application”. In addition to that Prof. Ashish ghosh (ISI, Kolkata), Dr. Avik Bhattacharya (IIT, Mumbai), Dr. P. K. Champati Roy (ISRO, India) and Dr. Debadatta Swain (IIT, Bhubaneswar) delivered lectures about various aspect of Remote sensing using Machine Learning techniques.

2. Online lecture 1: “Genomics to Smartphone Security: Data Science in Action”

Date of the event: 8th August, 2020
Number of attendees: 26
Online Platform: Google Meet
Speaker: Dr. Swarup Ray
3. **Online lecture 2: “Remote Sensing of Atmospheric Carbon Dioxide and Other Greenhouse Gases”**

Date of the event: 14th August, 2020
Number of attendees: 34
Online Platform: Google Meet
Speaker: Prof. Barun Ray chaudhury
4. Online lecture 3: “Sentinel in the Sky”

Date of the event: 12th September, 2020
Number of attendees: 27
Online Platform: Google Meet
Speaker: Dr. Debadatta Swain

Date of the event: 3rd October, 2020
Number of attendees: 30
Online Platform: Google Meet
Speaker: Dr. Avik Bhattacharya

Date of the event: 17th October, 2020
Number of attendees: 32
Online Platform: Google Meet
Speaker: Prof. Animesh Maitra
7. Online lecture 6: “Deep learning-based change detection in hyperspectral images”

Date of the event: 18th November, 2020
Number of attendees: 30
Online Platform: Google Meet
Speaker: Dr. Debasrita Chakraborty
8. Online lecture 7: “Multi-label Classification and its application to remotely sensed images”

Date of the event: 28th November, 2020
Number of attendees: 26
Online Platform: Google Meet
Speaker: Dr. Anwesha Law
4. Professional Development (career advising, mentoring, etc.)

1. Two Executive Chapter Meeting

   Date of the event: During February and March 2020
   Online Platform: Google Meet
   Description:

   Crucial decisions regarding roadmap during COVID pandemic situation were taken.

2. One Annual General Chapter Meeting

   Date of the event: 26 December 2020
   No of Participants: 20
   Online Platform: Google Meet
   Description:

   SLATE 2021 has been approved. A briefing regarding activities carried out in 2020 has been presented by the chair.

3. Startup Idea Competition

   Date of the event: 15 August 2020
   No of Participants: 25

   Description:
   Students of core engineering branches have presented new challenging start up ideas in this competition. Three awards have been given to successful participants.

4. IDEA/WISE-E Inspire & Empower Panel

   Date of the event: 29 October 2020
   No of Participants: 35

   Description:
   This event is organized by IEEE GRSS WIE section. Dr, Swastika Chakraborty has participated as woman leader to motivate our chapter girl students globally. Entire chapter members have participated in different role.
5. Involvement with GRSS (participation in IGARSS and other GRSS-sponsored conferences, number of papers vs. number of membership, sessions organized at such conferences, hosting conferences, etc.)

1. A tutorial lecture was delivered by prof. Ashish Ghosh at M2GARSS-2020, Tunisia during March 2020.

2. Participation in InGARSS 2020

   Date of the event: 02 December 2020
   No of Participants: 20

   Description:
   Prof. Pradipta Kumar Nandahas chaired a technical session of “Big Data, Sensor, Missions, Data analysis methods”.

3. Participation in InGARSS 2020 YP Activities

   Date of the event: 03 December 2020
   No of Participants: 20

   Description:
   Dr. Swastika Chakraborty has participated in the event as session chair. Entire chapter members have participated in different role.

6. Membership Development (report number of members in the last three years including the current one and comment the trend of memberships and possible actions performed, senior and fellow elevation, nominations submitted for senior and fellow members, etc.)

   The membership has increased from 64 to 74 in the beginning of the year 2019. Thereafter it has reached 92 at the end of the year 2019. At the end of 2020 it became 74. Attempts will be made to enhance the memberships at all levels. Attempts will be made to increase the memberships.
7. Fundraising (any activity for fundraising within the local industry, government, membership, etc.)

This year no fund raising activity could be made because of the Covid-19 pandemic situation. Further, minimum amount has been allowed to reimburse this year and a minimum amount will be reimbursed from existing as most of the activities were carried out in virtual mode.

8. Membership Diversity (involvement of under-represented groups including women, and activities to promote and increase engagement of underrepresented groups)

There are around 25 active women members in GRSS Kolkata chapter which is around 33% of the total members. Many workshops, seminars and lectures were conducted to enhance their participation in various roles. Besides, two members were in the SLATE 2020, one as vice-Chair and the other as the nomination chair. As Vice chair, she was involved in all the decision making process of the chapter.

9. Web Presence (web site development and evidence that it is widely used, especially to enhance the above activities)

There is an active website present in the following web link.

https://site.ieee.org/kolkata-grss/

------------------x------------------