

**2021**  
**ICNL**  
**VOL. 16 NO. 1**



IEEE India Council Newsletter

**UNLOCKING  
INDIA**

**IEEE** INDIA  
COUNCIL



## Message from the Chairman

**Dr. K.R.Suresh Nair**

Chair, IEEE India Council

Dear IEEE India Members!

One of the underlying keys to successfully establish a community of like-minded individuals is to earn the confidence, respect, and trust of its members. We believe it is a crucial responsibility of any organization to continue to create a favourable and lasting impression. The India Council Newsletter, which are bulletins issued periodically, help us achieve the same goal, by keeping us all informed of the proceedings at IEEE India Council and updated about activities, plans, future ventures etc. I perceive this newsletter as a common string that connects all our members. Which is why I am extremely glad to know that our new vibrant Newsletter team has brought this new edition of IEEE India Council Newsletter. I am thrilled about the novelties in this issue, and I am hopeful that our members will enjoy reading this issue.

Over the first quarter of 2021, India Council ventured into many arenas and conducted multitudinous activities viz. Fellow Elevation panel discussion, educational activities, WIE events, Young Professional programs, and naturally, a lot of student activities. In addition to these wonderful activities, this year we were fortunate to successfully associate with the Hope Foundation and we took the Pralhad P. Chhabria Awards to greater levels of reputation and accomplishments. Another gratifying moment of this quarter was the accord of IEEE Life-Time Achievement award to India Council's Shri.F.C.Kohli, accepted by Smt. Kohli at her residence in Mumbai. It always elates me to see how proliferating these activities are and in honest terms, it is a result of such constant and enthusiastic efforts, that with each edition, our Newsletter team is bestowed upon with the glorious opportunity to inform our readers of our progress and achievements.

Through this message I would like to express my heartiest gratitude to everyone who gave their inputs for this edition. Such publications, in my opinion, are not just a true reflection of great teamwork and a zealous attitude but are also a celebration of our collective efforts and ambitions as a society. With great elation and a strong hope that we continue to practice, create and achieve beyond benchmarks, I would like to sincerely and proudly acknowledge the remarkable efforts of the entire ICNL 2021 team, that is working under Mr. Utkarsh Singh. I am sure to witness many more impressive editions in the coming session.

With best regards,  
Suresh Nair



## Message from the Editor

**Mr. Utkarsh Singh**

Editor-ICNL, IEEE India Council

Dear readers,

IEEE India Council sincerely hopes that you and your family are doing well in this second wave of the pandemic in India. We would like to highlight the importance of getting vaccinated if you're eligible, wearing masks, following social distancing and Covid-19 safety guidelines so that we may defeat this pandemic and get back to normal as soon as possible. In the past months, we all have faced many new kinds of challenges and difficulties. It has been a testing time but like always, we are sure there is light at the end of the tunnel. With the advent of various vaccines around the world, we now have a new hope to hold on to.

A year ago the sun that had set and left us in the dark seems to be rising, slowly but steadily. Things will take time to fall into place but the important lessons we all have been taught are of patience and hope. With patience and hope, we were able to put up an appreciable fight against the pandemic and resultantly, the country was able to resume work and life in the previous quarter. Our events at IEEE have also started to open up. From the distant virtual interactions we are now moving to offline or hybrid platforms. This unlocking is the first ray of the rising sun, the first light from the end of the tunnel and a new hope for us all. This philosophy is what has inspired our theme for **ICNL vol. 16 no.1, "Unlocking India"**.

I thank everyone who has contributed to this newsletter across India. A special expression of gratitude to Mr. Deepak Mathur (Director, IEEE Region 10 & Advisor, IEEE India Council) for his precious time and thoughts for the guest interview. I am also immensely grateful to Mr. R.K. Asthana (Chair Life Member Committee Region 10 & Ombudsman India Council) for sharing his valuable experiences as a veteran of IEEE. Special thanks to Mr. Archit Goswami, Mr. Vamsi Krishna and Mr. Sabarinath Pillai for contributing to the newsletter with their volunteering experience as one of the leading YPs of IEEE India Council. Lastly but most importantly, huge appreciation to India Council Leadership of Dr. Suresh Nair, Dr. Rajashree Jain and Dr. Prerna Gaur for providing us with the flexibility to experiment and their continuous guidance & support.

In this edition, we intend to carry forward with the legacy of past year's newsletters with a new design aspect, new additions of Guest interview, Sections for YP/WIE/LM, resource sharing and much more. On behalf of the whole ICNL team, we hope you enjoy the design and the content of this edition of the Newsletter.

We hope you have a great read.



# IEEE India Council Core Committiee



**Dr. K.R.Suresh Nair**

Chair, IEEE India Council



**Dr. Rajashree Jain**

Secretary, IEEE India Council



**Dr. Purna Gaur**

Treasurer, IEEE India Council



**Dr. Sri Niwas Singh**

Immediate Past Chair,  
IEEE India Council



**Prof. Debabrata Das**

Chair Elect, IEEE India Council



**Mr. Deepak Mathur**

Advisor, IEEE India Council



**Dr. Sivaji Chakravorti**

Advisor, IEEE India Council

# IEEE India Council Executive Committee 2021

S.NO.	Name	Role	Section
1	Dr. K.R. Suresh Nair	Chair	Kerala
2	Dr. Rajashree Jain	Secretary	Pune
3	Dr. Prerna Gaur	Treasurer	Delhi
4	Dr. Sri Niwas Singh	Immediate Past Chair	UP
5	Prof. Debabrata Das	Chair Elect	Bangalore
6	Deepak Mathur	Advisor	Gujarat
7	Dr. Sivaji Chakravorti	Advisor	Kolkata
8	Er. R.K. Asthana	Ombudsman	Delhi
9	Mr. Harish Mysore	IEEE India Office	Bangalore
10	Dr. Thangaprakash Sengodan	Vice Chair, ECIM	Madras
11	Dr. Atul Negi	Vice Chair, Technical Activities	Hyderabad
12	Dr. Y. Vijayalata	Vice Chair - Student Activities	Hyderabad
13	Prof. S.V. Kulkarni	Vice Chair - Awards	Bombay
14	Dr. Mini Ulanat	Vice Chair - WIE	Kerala
15	Er. Sabarinath Pillai	YP Activities & Student Coordination Team	Kerala
16	Dr. R.B. Jadeja	Vice Chair - Branding & Member Benefits	Gujarat
17	Mr. Puneet Mishra	Vice Chair - Professional Activities	Bangalore
18	Dr. Asheesh K Singh	Vice Chair - Section & Sub Section Co-ordinator	Uttar Pradesh
19	Mr. Abhay Phansikar	Vice chair - Industry Relations	Bombay
20	Dr. D. Devaraj	Vice Chair - Educational Activities	Madras
21	Dr. Rajesh Ingle	Vice Chair - Membership Development	Pune
22	Ms. Sadhana Attavar	Vice Chair - HTA	Bangalore
23	Sanjay Kar Chowdhury	Vice Chair - Operations, Outreach and Strategic Planning	Kolkatta
24	Mr. Utkarsh Singh	Editor, News Letter	Delhi

## IEEE India Council Section Chairs - 2021

S.NO.	Name	Role	Section
1	Dr. Bindumadhava	Section Chair	Bangalore
2	Dr. Satyanarayana Bheesette	Section Chair	Bombay
3	Prof. Manik Lal Das	Section Chair, Section Subsection Co-ordination	Gujarat
4	Mr. Sreenivas Jasti	Section Chair, YP & Students Co-ordination	Hyderabad
5	Ms. Sarada Jayakrishnan	Section Chair, Humanitarian Activities	Kerala
6	Prof. Sudip Misra	Section Chair, Student Activities	Kharagpur
7	Prof. Sushmita Mitra	Section Chair, Branding & Member benefits	Kolkatta
8	Dr. N. Kumarappan	Section Chair, Professional	Madras
9	Mr. Girish Khilari	Section Chair, Industrial	Pune
10	Mr. S. Lakshmi Narayana	Section Chair, Educational	Vizag
11	Dr. Rachana Garg	Section Chair	Delhi
12	Dr. Satish Singh	Section Chair	Uttar Pradesh



## About the Theme

Almost a year back, the world witnessed a phase that shall last for a very long time in the living memory. The world changed in an unimaginable way as we came face to face with a global calamity. Hope disappeared, and new challenges occupied the foreground. The burden of shifting things to digital mode without sacrificing productivity and efficiency felt impossible. A year has passed in this scourge while we all tried our best to keep communication and networking functional, reliable and fruitful. The new normal has crept into our routines. Before we untangle the world and unlatch our doors to meet our previous normal, we must save and register our experience from the halt we faced, and extract the best of the lessons from there, so we come back stronger and better. We believe the most remarkable growth comes when wisdom is imparted via sharing of experiences. In this issue, ICNL 2021 acknowledges the experiences of all IEEE India Council's volunteers, Young Professionals, Life Members and all its members. It is time we push our creative blocks aside and slowly let the light in. We wish all our readers a safe and productive new session!

The cover also highlights our theme. The cover and the theme of the newsletter also has the theme related to the space and stars. This is our tribute to the IEEE Milestone Recognition to the Giant Metrewave Radio Telescope (GMRT) which is possibly the greatest achievement by IEEE India in the previous quarter. GMRT is one of the gems of India which has unlocked many mysteries about space and the stars. With this recognition, the GMRT becomes the third IEEE Milestone in India along with "FirstMillimeter-Wave Communication Experiment" by Acharya J. C. Bose in 1894-1896, and "Raman effect", by Sir C. V. Raman in 1928. Due to the grandeur of this achievement, the theme for this edition of ICNL has been curated to highlight this achievement.



# UNLOCKING INDIA



# IEEE INDIA COUNCIL OFFICE BEARERS

Dear esteemed IEEE India Council Members & Section Chairs,

List of India Council Officers updated as on 20-12-2020 is given below. All IEEE Members & Section Chairs are requested to check the list for its correctness. Kindly let me know if there are some corrections needed in the following list.

Rajendra K. Asthana, Ombudsman, IEEE India Council ([asthana@ieee.org](mailto:asthana@ieee.org))

Year	Chair	Immediate Past Chair	Executive V C	Secretary – cum – Treasurer OR	
				Secretary	Treasurer
1976	F. C. Kohli (Bombay)	None	T. R. Subramanian (Bombay)	H. B. Shah (Bombay)	
1977	F. C. Kohli (Bombay)	None	T. R. Subramanian (Bombay)	H. B. Shah (Bombay)	
1978	F. C. Kohli (Bombay)	None	T. R. Subramanian (Bombay)	H. B. Shah (Bombay)	
1979	F. C. Kohli (Bombay)	None	D. N. Purandare (Bombay)	H. B. Shah (Bombay)	
1980	F. C. Kohli (Bombay)	None	T. V. Balan (Hyderabad)	H. B. Shah (Bombay)	
1981	J. Kirith Sheth (Bombay)	F. C. Kohli (Bombay)			
1982	J. Kirith Sheth (Bombay)	F. C. Kohli (Bombay)			
1983	T. V. Balan (Hyderabad)	J. Kirith Sheth (Bombay)			
1984	T. V. Balan (Hyderabad)	J. Kirith Sheth (Bombay)	M. R. Sitharaman (Bangalore)	S. C. Sahasrabudhe (Bombay)	R. K. Shankar (Bombay)
1985	T. V. Balan (Hyderabad)	J. Kirith Sheth (Bombay)	M. R. Sitharaman (Bangalore)	S. C. Sahasrabudhe (Bombay)	R. K. Shankar (Bombay)
1986	T. V. Balan (Hyderabad)	J. Kirith Sheth (Bombay)	H. S. Sonawala (Bombay)	R. K. Shankar (Bombay)	
1987	P. V. S. Rao (Bombay)	T. V. Balan (Bombay)	H. S. Sonawala (Bombay)	R. K. Shankar (Bombay)	
1988	P. V. S. Rao (Bombay)	T. V. Balan (Bombay)	H. P. Khincha (Bangalore)	G. D. Dubey (Madras)	
1989	P. V. S. Rao (Bombay)	T. V. Balan (Bombay)	H. P. Khincha (Bangalore)	G. D. Dubey (Madras)	
1990	P. K. Patwardhan (Bombay)	P. V. S. Rao (Bombay)	M. Ramamoorthy (Hyderabad)	C. G. Ravi (Bombay)	
1991	Harbans L. Bajaj (Delhi)	P. K. Patwardhan (Bombay)	C. G. Ravi (Bombay)	Rajendra K. Asthana (Delhi)	





Year	Chair	Immediate Past Chair	Executive V C	Secretary – cum – Treasurer OR	
				Secretary	Treasurer
1992	Harbans L. Bajaj (Delhi)	P. K. Patwardhan (Bombay)	C. G. Ravi (Bombay)	Rajendra K. Asthana (Delhi)	
1993	Harbans L. Bajaj (Delhi)	P. K. Patwardhan (Bombay)	C. G. Ravi (Bombay)	Rajendra K. Asthana (Delhi)	
1994	C. G. Ravi (Bombay)	Harbans L. Bajaj (Delhi)	H. Kalyanasundaram (Bombay)	Kranti Kumar (Bombay)	Rajendra K. Asthana (Delhi)
1995	C. G. Ravi (Bombay)	Harbans L. Bajaj (Delhi)	H. Kalyanasundaram (Bombay)	Kranti Kumar (Bombay)	Rajendra K. Asthana (Delhi)
1996	C. G. Ravi (Bombay)	Harbans L. Bajaj (Delhi)	Mruthyumjaya (Bangalore)	Kranti Kumar (Bombay)	
1997	R. K. Bagga (Hyderabad)	C. G. Ravi (Bombay)	Akshai K. Aggarwal (Gujarat)	N. V. Rao (Hyderabad)	
1998	R. K. Bagga (Hyderabad)	C. G. Ravi (Bombay)	Akshai K. Aggarwal (Gujarat)	N. V. Rao (Hyderabad)	
1999	Akshai K. Aggarwal (Gujarat)	R. K. Bagga (Hyderabad)	P. K. Srivastava (Delhi)	Ashok R. Pandya (Gujarat)	
2000	Akshai K. Aggarwal (Gujarat)	R. K. Bagga (Hyderabad)	P. K. Srivastava (Delhi)	Ashok R. Pandya (Gujarat)	
2001	P. K. Srivastava (Delhi)	Akshai K. Aggarwal (Gujarat)	V. K. Damodaran (Kerala)	Rajendra K. Asthana (Delhi)	
2002	P. K. Srivastava (Delhi)	Akshai K. Aggarwal (Gujarat)	R. Muralidharan (Bombay)	Rajendra K. Asthana (Delhi)	
2003	R. Muralidharan (Bombay)	P. K. Srivastava (Delhi)	Rajendra K. Asthana (Delhi)	Raju Hira (Bombay)	
2004	R. Muralidharan (Bombay)	P. K. Srivastava (Delhi)	Rajendra K. Asthana (Delhi)	Raju Hira (Bombay)	
2005	Rajendra K. Asthana (Delhi)	R. Muralidharan (Bombay)	N. T. Nair (Kerala)	Ram Nath (Delhi / San Francisco)	
2006	Rajendra K. Asthana (Delhi)	R. Muralidharan (Bombay)	N. T. Nair (Kerala)	Ram Nath (Delhi / San Francisco)	
2007	N. T. Nair (Kerala)	Rajendra K. Asthana (Delhi)	Kasi Rajagopal (Bangalore)	K. G. Satheesh Kumar (Kerala)	
2008	N. T. Nair (Kerala)	Rajendra K. Asthana (Delhi)	Kasi Rajagopal (Bangalore)	K. G. Satheesh Kumar (Kerala)	
2009	Kasi Rajagopal (Bangalore)	N. T. Nair (Kerala)	Suresh Chander Pal (Chennai)	Rama Krishna (Bangalore)	
2010	Kasi Rajagopal (Bangalore)	N. T. Nair (Kerala)	Suresh Chander Pal (Chennai)	Rama Krishna (Bangalore)	
5/2010	Kasi Rajagopal (Bangalore)	N. T. Nair (Kerala)	Suresh Chander Pal (Chennai)	Rama Krishna (Bangalore)	





Year	Chair	Immediate Past Chair	Executive V C	Secretary – cum – Treasurer OR	
				Secretary	Treasurer
5/2011	Ram Gopal Gupta (Delhi)	Kasi Rajagopal (Bangalore)	M. Ponnaivaiko (Chennai)	V. R. Singh (Delhi)	
2012	Ram Gopal Gupta (Delhi)	Kasi Rajagopal (Bangalore)	M. Ponnaivaikko (Chennai)	V. R. Singh (Delhi)	
2013	M. Ponnaivaikko (Chennai)	Ram Gopal Gupta (Delhi)	Deepak Mathur (Gujarat)	Major Chandrasekharan V.V. (Madras)	
2014	M. Ponnaivaikko (Chennai)	Ram Gopal Gupta (Delhi)	Deepak Mathur (Gujarat)	Major Chandrasekharan V.V. (Madras)	
2015	Deepak Mathur (Gujarat)	M. Ponnaivaikko (Chennai)	Sivaji Chakravorty (Kolkata)	Anthony Lobo (Mumbai)	Anil Roy (Gujarat)
2016	Deepak Mathur (Gujarat)	M. Ponnaivaikko (Chennai)	Sivaji Chakravorty (Kolkata)	Anthony Lobo (Mumbai)	Anil Roy (Gujarat)
2017	Sivaji Chakraborty (Kolkata)	Deepak Mathur (Gujarat)	S. N. Singh (UP)	Preeti Bajaj (Mumbai)	S. M. Sameer (Kerala)
2018	Sivaji Chakraborty (Kolkata)	Deepak Mathur (Gujarat)	S. N. Singh (UP)	Preeti Bajaj (Mumbai)	S. M. Sameer (Kerala)
2019	S. N. Singh (UP)	Sivaji Chakraborty (Kolkata)	Suresh Nair (Kerala)	Puneet Mishra (Bangalore)	R. B. Jadeja (Gujarat)
2020	S. N. Singh (UP)	Sivaji Chakraborty (Kolkata)	Suresh Nair (Kerala)	Puneet Mishra (Bangalore)	R. B. Jadeja (Gujarat)
2021	Suresh Nair (Kerala)	Sri Niwas Singh (U. P.)	Debabrata Das (Bangalore)	Rajashree Jain (Pune)	Purna Gaur (Delhi)
2022	Suresh Nair (Kerala)	Sri Niwas Singh (U. P.)	Debabrata Das (Bangalore)	Rajashree Jain (Pune)	Purna Gaur (Delhi)





# IEEE INDIA COUNCIL - ACE / INDICONS JOINTLY ORGANISED WITH SECTIONS

Dear Section Chairs,

List of India Council Joint Activities {Annual Convention & Exhibition(ACE)} up to 2003 and INDICONS starting 2004 is compiled. It was circulated to all Section Chairs for updating but no details / comments (portions marked in yellow) are received. Section Chairs are once again requested to please update/ provide missing details/information so that it could be put on India Council website for future reference of all. Sections are identified 1984 onwards.

Rajendra K. Asthana, India Council Ombudsman (asthana@ieee.org)

No	ACE	Year	Venue	City	Date	Month	Year	Theme	Section
1	ACE	1974	Bombay Patkaar Hall - Convention Sundarbai Hall - Exhibition	Bombay	30/1-3/2	Jan/Feb	1974		Bombay
2	ACE	1975							
3	ACE	1976							
4	ACE	1977							
5	ACE	1978							
6	ACE	1979							
7	ACE	1980	Kanakkunnu Palace	Trivandrum	2-5	Nov	1980	Instrumentation In The Eighties	Kerala
8	ACE	1981							
9	ACE	1982							
10	ACE	1983							
11	ACE	1984	Hotel Oberoi Grand	Calcutta	4-9	Dec	1984	Technology For People	Calcutta
12	ACE	1985	Taj	Bombay		Jan	1986	High Technology And Human Resouces	Bombay
13	ACE	1986		Chennai	9-12	Dec	1986	Computers And Communications	Madras
14	ACE	1987		Bombay	5-9	Jan	1988	Technological Advancement And Combating Obselescence	Bombay
15	ACE	1988	IEI Building	Pune	20-25	Feb	1989	Electronics In Medicine And Industry	Bombay
	ACE	1989							
16	ACE	1990	Windsor Manor	Bangalore	21-25	Jan	1991	Technology Scenario For 90S	Bangalore
17	ACE	1991	Govt. Guest House	Trivandrum	28-30	Nov	1991	Electro Technologies For Rural Development	Kerala





No	ACE	Year	Venue	City	Date	Month	Year	Theme	Section
18	ACE	1992	Birla Industrial & Technological Museum	Calcutta	21-23	Nov	1992	Energy, Information And Communications Systems	Calcutta
19	ACE	1993	JNTU	Hyderabad	25-27	Nov	1993	Engineering Education And Relevant Technologies For India	Hyderabad
20	ACE	1994	NITE	Mumbai	22-25	Dec	1994	Engineering Education And Relevant Technologies For India	Hyderabad
21	ACE	1995	Hyatt Regency	New Delhi	26-27	Mar	1996	Electronics In Manufacturing Systems	Delhi & UP
22	ACE	1996	Anna University	Chennai	30/11 - 2/12	Nov/ Dec	1996	Quality-A Global Perspective	Madras
23	ACE	1997	JNTU	Hyderabad	11-13	Dec	1997	Networking And Internet	Hyderabad
24	ACE	1998	ONGC Campus	Ahmedabad	10-13	Dec	1998	Conferences CNIW - 98 And CEEPCI - 98	Gujarat
25	ACE	1999		Trivandrum	2-4	Dec	1999	Intelligent Networking	Kerala
26	ACE	2000	World Trade Centre	Mumbai	15-17	Dec	2000	Software Challenges Ahead	Bombay
27	ACE	2001	India Habitat Centre	New Delhi	1-3	Nov	2001	Convergence In SPICE- Semiconductors, Power, It, Communication, Entertainment	Delhi
28	ACE	2002	Science City	Kolkata	20-21	Dec	2002	EPIC-Entertainment, Power, It, Communication	Calcutta
29	ACE	2003	Le Meridien	Pune	12-14	Dec	2003	Emerging Technology Trends	Bombay
30	INDICON	2004	IIT, Kharagpur	Kharagpur	20-22	Dec	2004	Computers, Control, Communication Etc.	Kharagpur
31	INDICON	2005	IIT, Chennai	Chennai	11-13	Dec	2005	Emerging Trends In Electrical, Electronic And Information Technologies	Madras
32	INDICON	2006	India International Centre, New Delhi	New Dehi	15-17	Sep	2006	Emerging Trends In ICT	Delhi
33	INDICON	2007		Bangalore					Bangalore





No	ACE	Year	Venue	City	Date	Month	Year	Theme	Section
34	INDICON	2008	IIT	Kanpur					U P
35	INDICON	2009	DA-ICT, Gandhinagar	Gandhinagar	18-20	Dec	2009	Innovations.merging Technologies, Enginnering With Excellence For Humanity	Gujarat
36	INDICON	2010	Jadvapur University	Kolkata	17-19	Dec	2010	Green Energy, Computing & Communications	Kolkata
37	INDICON	2011		Hyderabad					Hyderabad
38	INDICON	2012		Kochi					Kerala
39	INDICON	2013	IIT, Mumbai	Mumbai	13-15	Dec	2013	Impact Of Engineering On Global Sustainability	Mumbai
40	INDICON	2014		Pune					Pune
41	INDICON	2015		Delhi					Delhi
42	INDICON	2016		Bangalore					Bangalore
43	INDICON	2017		Roorkee					U P
44	INDICON	2018	Amrita Vishwapeetham, Coimbatore	Coimbatore	16-18	Dec	2018	Harnessing Technology For Humanilty	Chennai
45	INDICON	2019	Marwari University, Rajkot	Rajkot	13-15	Dec	2019	Applying Artificial Intelligence In Engineering For Prosperity & Betterment Of Humanity	Gujarat
46	INDICON	2020	NSUT, Delhi	Delhi	11-13	Dec	2020	Technology Intervention To Build Future - Ready Society	Delhi





## GUEST INTERVIEW

**Mr. Deepak Mathur**

Director, IEEE Region 10

Deepak Mathur is Director of IEEE Region 10 (Asia-Pacific Region). IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

He has served in many leadership roles in IEEE at Section, Council, Region, MGA (Member Geographic Activities) and was also a Member of Board of Governors of IEEE Society on Social Implications of Technology (2013-2015). Deepak served as Chair of IEEE India Council in 2015-2016.

He is also a member of IEEE-HKN or Eta Kappa Nu (HKN), which is the international honor society of the IEEE.

Deepak, has more than 37-years of professional experience in the fields of Electronics, Telecommunication, IT and has held various engineering and managerial positions.

Deepak received his bachelor of engineering degree in Electronics and Communications from Indian Institute of Technology, Roorkee, and has a Masters in Business Administration. He has also completed 'Advance Management Program' from IIM, Calcutta.

Deepak is recipient of prestigious IEEE Region 10 Outstanding Volunteer Award and IEEE MGA Achievement Award.



Having served in multiple leadership roles in IEEE at various levels, you must be aware of the struggles and benefits that those roles have to offer. Can you give us some insight for better understanding of those roles with a focus on being the Director of Region 10?

Indeed, with every leadership role there were great responsibilities and accountabilities which I fully enjoyed. In the process, there were great support and encouragement from all colleagues and that made my journey very interesting and satisfying.

I have held many important leadership positions in IEEE. I was the Section Chair (Gujarat 2006-07), India Council Chair (2015-16) and I am the current Director of IEEE Region 10. All these roles provided challenges that have shaped my career over the years. I always tried to take team along, believed in people, never micromanaged and was always receptive to ideas. All these gave me astonishing result and I could make changes wherever I worked.

IEEE gave me opportunities to think from organizational perspective in my leadership roles. I implemented many ideas, took initiatives and there were great learnings from successes and failures. I always had great support of fellow volunteers. Once you develop trust, the results are



amazing. My greatest satisfaction was from the changes we brought in India Council working. As I mentioned before, I had great support especially from all sections, they supported all my endeavors, very soon we became financially sustainable and a registered society. We also inducted YP and WIE in India Council and made them part in the planning and decision making. We also thought of involving students and their potential and the concept of 'Student Coordination Team' was implemented. The YPs, WIE and SCT are contributing immensely. Apart from support from sections and other volunteers, I had great encouragement and guidance from Dr M Ponnaivaikko, Mr Rajendra Asthana and Prof Sivaji Chakraborty. India Office gave me all necessary support to register the Council and streamlining many processes.

And this is something that gave me great experience, insights and confidence that proved to be useful in my professional front as well. We have great team in Region 10. We have our thrust areas, priorities and all our EXCOM members are having tremendous sense of responsibilities. 2021-2022 Region 10 will more focus on collaborative approaches. We have just started, but I am confident of the efforts of Region 10 team.



**Being the current director of the IEEE Asia-Pacific Region (R10), what are some of your suggestions/tips for India Council to make the best out of the opportunities that they are getting being part of IEEE?**


In my opinion, India Council is already doing an excellent job. The current team of the Council, led by Dr Suresh Nair has an inspiring vision, which will bring transformations worth idealizing. All matters are discussed in the committee and decision is reached by consensus. Such transparency in functioning not only is professionally worth all the applause but it also creates a space where individual volunteers and members feel confident and comfortable to generate newer ideas, make suggestions and set ignition to initiatives that exceed expectations. I am happy to see the way India Council is now led. Our greatest strength lies in teamwork and each volunteer must be respected and given the freedom to express views. With Dr. Nair's excellent guidance, I am sure we all are to see some brilliant work in the future.

**Not many actively contribute to IEEE society in terms of their skillset or knowledge. There are a lot of brilliant minds in India, but they hesitate on taking up the first step in building leadership qualities. What would you like to advise them?**



In my view, society chapters are already doing great job. Technical society/council chapters in our sections are organizing many good programs like workshops, seminars, summer schools and conferences. India organizes more than 160 technically/financially conferences every year. Surely, we need more collaboration in sections with chapters. Such collaborations would definitely attract more brilliant minds from across the country to network, collaborate and implement innovative initiatives to further the mission and vision of IEEE. The Chapters in the Council were dissolved in 2019-2020.





For the younger minds, my advice would be to always leverage IEEE and its resources to grow in terms of skillset and knowledge. A good engineer or professional will always contribute to the society in a better way and IEEE has all resources for one's professional and technical development.

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Given the zeal and ambition you possess, we would like to know your future goals for IEEE Asia-Pacific Region (R10)?



My primary focus will be on creating opportunities for our volunteers. Our philosophy is "Member Value Creation - Let our programs create value to address member recruitment and member retention." We charted thrust areas and priorities for Region 10. Following are main Region 10 priorities for 2021-2022:-

- Improving conference quality and training our volunteers at conferences.
- Enhance member value, member satisfaction through Section/Chapter collaborative programs.
- Encourage industry academia partnership programs.
- Emphasize on sustainable 'Humanitarian Technology' projects.
- Promote 'Reaching Locals' initiative.


With these goals we intend to uplift and promote the interest of each member and impart value and engagement across various multitudinous branches, sections, councils, chapters etc. Growth takes place when we constantly keep creating new opportunities, and while we undertake fresh new initiatives, it is the volunteers that function on ground zero. Hence, investing in members and volunteers is crucial to any organization, as a great volunteer equals to a good event, a better idea and a great society



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Serving in a more influential post, demands for more time and dedication for work. How do you manage a balance between personal and professional life, especially in the COVID times? Moreover, what suggestions do you have for the younger generation towards maintaining a good work-life-volunteering balance?

Yes, volunteering is surely very demanding, but it is very satisfying at the same time. You get an amazing opportunity to work with a remarkably diverse set of people, that do not speak the same languages as you, or probably do not have the same professional background as you. It's the global perspective that IEEE provides to each of its volunteers that keep you connected and enhances these experiences in multiple ways. For me, volunteering is a passion, and I am here by choice. When I see my other colleagues, I observe that volunteering has imparted efficiency in me. I have learnt how to use my time in the best way. Surely, there is a need to have a 'work-life-volunteering' balance and which I think we all are compelled to learn in our own ways. I am an early riser and that gives me an edge.







I always say that if you are a good student, you serve IEEE in a better way. Similarly, a professional with good knowledge and a vibrant profile serves IEEE more effectively. IEEE is the world's largest technical and professional organization fostering technological innovation for the benefit of humanity. Hence, we must take the benefit of its rich resources to enhance our knowledge and sharpen our skills. We also have an added opportunity to serve it with our technical/professional knowledge and leadership skills. IEEE is a volunteer led organization.

On those points, IEEE and work should complement each other. Once you achieve that balance in your work-volunteering-life, you would realize that volunteering improves you at your work by making you sharper and more efficient and your work gives you the skills and experience of working across teams that makes you a better volunteer. But we have to devise our own way of balancing. What works for one might not work for the others.



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IEEE is a professional organization. People happen to get good exposure and knowledge by being part of it but is there some fun aspect to it as well?

I have enjoyed volunteering in all my roles. Organizing events and participating in them have always been fun. IEEE tries to keep cultural programs or similar engagement in events, which are a great sphere for networking as well. As a leader, we must create a stress-free environment for our volunteers and let volunteering be a joy. I have many fond memories of volunteering and I think each volunteer should get to live such joyous experiences.

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What is IEEE to you? (In one word or sentence)



IEEE's rich technical resources, global professional network with opportunities to make friends.



## IEEE Milestone Recognition

# The Giant Metre Wave Radio Telescope (GMRT)

*The third IEEE milestone recognition of India*

**30 March, 2021 Pune - India:** Today in a simple dedication ceremony a bronze plaque commemorating the recognition of IEEE Milestone was handed over to NCRA by IEEE. Prof. Toshio Fukuda – IEEE President and CEO in 2020, officially announced the GMRT as an IEEE Milestone. He noted how engineers, scientists and technologists contribute to our global community and have helped build today's technologically advanced world and commented that it is increasingly more important that we take opportunity to come together to recognise accomplishments and contributions of our colleagues in the engineering and technology profession. He added that this recognition of the GMRT serves as a landmark of technology and progress of our civilisation.



The Plaque was virtually unveiled by Shri K N Vyas, Secretary of the Department of Atomic Energy and Chairman of the Atomic Energy Commission. On the occasion, Prime Minister Modi, through his message, congratulated the scientists and engineers of the GMRT for this global recognition and recalled India's glorious tradition in astronomy dating thousands of years back and added that the GMRT is a shining example of "Atmanirbhar Bharat" (Self Reliant India).



Dr. Girish Khilari (IEEE Pune Section Chair), Dinanath Kholka (Immediate Past Chair, Pune section), Prof. Yashwant Gupta (Centre Director, NCRA) & Prof. Jayaram Chengalur (Dean, NCRA Faculty) at the plaque hand-over ceremony on the 30th of March 2021.

Accepting the Milestone Plaque Prof Yashwant Gupta, Centre Director, NCRA said "This IEEE Milestone status puts our observatory truly in a very special league. It is a moment of great pride and joy for all of us at NCRA; and not just for us, but for the entire scientific and technical community of the country. The value of this recognition by the world's largest body of professionals thus has a very special meaning to all of us here at NCRA and the whole country."

Earlier the IEEE ED and COO, Steve Welby, gave an overview of IEEE and its importance to the technical communities around the world. He also noted his own experiences in working on similar large scientific programs and their importance to humanity.

Chair of IEEE History Committee, Dr. Janina Meziarska, said there are 234 Milestones approved by the IEEE around the world with 18 awaiting dedications. Of these, 41 Milestones are dedicated In the Asia Pacific (IEEE Region 10), 38 of them in Japan, 2 in India and 1 in Australia. "The Giant Metrewave Radio Telescope (GMRT), 1994" is becoming the third IEEE Milestone in India and 42nd in Region 10.

Prof K. Vijay Raghavan, Principal Scientific Advisor to the Government of India, said, "The GMRT reflected the daring and ambitions of the pioneers in India, who built institutions and facilities of this kind. Now in the times of globalisation, when there are multiple and easily available aspects of technology which can be purchased, we need to reinvent our commitment to thinking technology development in a manner which is adventurous, pathbreaking and valuable to India and the world." Shri Prakash Javadekar, Minister for Environment, Forest & Climate change and Information & Broadcasting, also congratulated NCRA and the GMRT, through a letter of appreciation.

Several dignitaries from the scientific community participated in the ceremony, either online or via recorded video or text messages, such as : Mr. K. Ramchand (Member Technology, Department of Telecommunications), Prof. S Ramakrishnan (Director, Tata Institute of Fundamental Research), Dr. Anil Kakodkar (former Chairman of the Atomic Energy Commission of India), Dr. R. A. Mashelkar (former Director General of CSIR), Prof. K Kasturi Rangan (former Chairman, ISRO and present Chancellor of Central University of Rajasthan and NIIT University) and Prof. Jayant Narlikar ( noted astrophysicist and emeritus professor at the Inter-University Centre for Astronomy and Astrophysics). They recognised and lauded the achievements of the GMRT, while recollecting the contributions of Prof Govind Swarup.

IEEE Pune section chair while handing over the bronze plaque to NCRA Centre Director said it is a great honour to everyone in the section that Pune is the host for the third IEEE Milestone in India.

The IEEE Milestones program honors significant technical achievements in all areas associated with IEEE. Milestones recognize the technological innovation and excellence for the benefit of humanity found in unique products, services, seminal papers and patents. Each milestone recognizes a significant technical achievement that occurred at least twenty-five years ago and having at least regional impact.



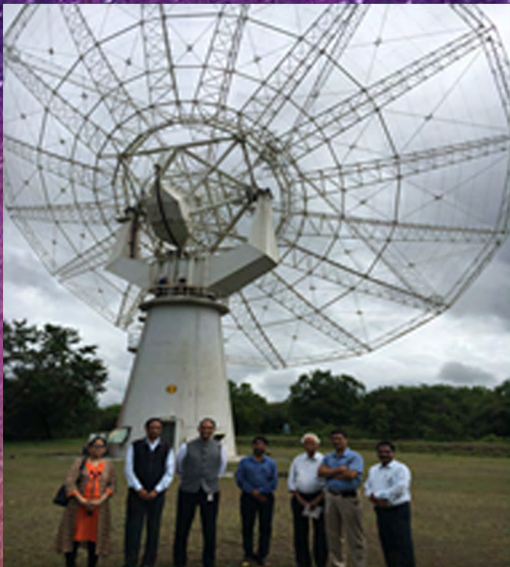
IEEE Milestone: Giant Metrewave Radio Telescope (GMRT), 1994 was considered by IEEE History Committee, recommended to IEEE Board of Directors and approved by IEEE during Nov 2020 Board Series with the following plaque citation:

GMRT, consisting of thirty antennas of 45 m diameter each, spanning 25 km near Pune, India, is one of the largest and most sensitive low frequency (110–1460 MHz) radio telescopes in the world.

It pioneered new techniques in antenna design, receiver systems, and signal transport over optical fibre. GMRT has produced important discoveries in domains such as pulsars, supernovae, galaxies, quasars, and cosmology, greatly enhancing our understanding of the Universe.

With this recognition, the GMRT becomes the third IEEE Milestone in India along with “First Millimeter-Wave Communication Experiment” by Acharya J. C. Bose in 1894-1896, and “Raman effect”, by Sir C. V. Raman in 1928.

The process of considering IEEE Milestone proposals by the IEEE History Committee is very thorough and in-depth. Juan Carlos Miguez, the Advocate nominated by History Committee, validated the submission after scrutinizing the Milestone documentation with several rounds of reviews. The entire process took more than one year from the time the IEEE team visited the GMRT site in Junnar Maharashtra, to the final approval by the IEEE Board.



24 Oct 2019 Junnar, Maharashtra: Dr. Rajashri Jain, Harish Mysore, Dinanath Khloker, Nilesh Deshmukh, Prof. Mandar Khurjekar, Prof. Yashwant Gupta, Dr. J K Solanki at the GMRT.

Prof. Govind Swarup (1929-2020) :  
The father of radio astronomy in India



During 1984 to 1996, Prof. Swarup conceived and directed the design and construction of the GMRT, which consists of 30 large fully steerable antennas, (each 45 m diameter), spread out over a 25 km region, about 80 km from Pune. Once again his innovative design was crucial to allow the construction of a world class telescope at a very modest cost. The GMRT remains one of the most sensitive radio observatories in the world in the frequency range of 130 – 1450 MHz , attracting users from all over the world and producing a slew of cutting edge science results. It has the pride of place as one of the biggest basic science projects in the country. He became the project director of the GMRT in 1987, and

and when his group in TIFR became the National Centre for Radio Astrophysics of TIFR, he became its first Centre Director in 1993. He was a strong proponent of building up scientific capacity in the country, and played an important early role in conceptualising the setting up of the IISERs.

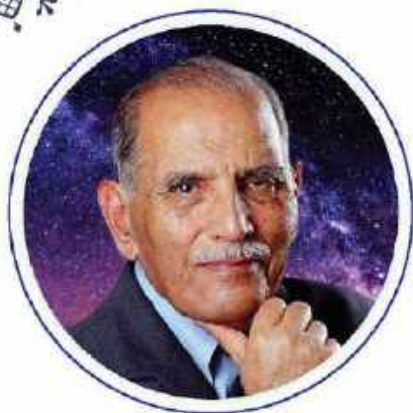
We received two excellent reviews in support of our submission for the GMRT. The first was from Prof. Richard T. Schilizzi, Chair of the IAU working group on the history of Radio astronomy. In his recommendation, he noted "Since being declared an international facility in 2001, the GMRT, with its ~50,000 m<sup>2</sup> collecting area, has been recognised as the most sensitive fully-steerable low frequency telescope in the world, supported by a world-class scientific and engineering staff. It is a multi-purpose Observatory attracting observing proposals from around the world on most of the important topics in astronomy and astrophysics. It showcases Indian achievements and innovation on the scientific and engineering fronts, and has been instrumental in educating many young students who have gone on to careers in astronomy at the most prestigious institutes and universities in the world. The experience accumulated over the years allowed the Observatory to take on leadership of the Telescope Manager design package for the SKA, a significant recognition in itself. All this has been made possible by the GMRT. It is a significant technical achievement and worthy of an IEEE Milestone Award for its innovation and value for humanity."

The second review, from Jacob Baars, Member of the Historical Radio Astronomy working group of the IAU, noted "I have read the GMRT proposal that was attached to your message. It paints a good and complete picture of the project from the initial scientific justification and technical layout to the realization of the hardware in a remarkable indigenous concentration. I support it fully."

With the building and release of the GMRT, India joined the group of "high technology" nations with an example of high-performance technology facility, fully developed in the country, providing the astronomers of the world significantly enhanced observational capabilities in the low frequency radio astronomy regime.

The virtual program was also live broadcasted through YouTube and a full recording of the event can also be viewed at :  
<https://www.youtube.com/watch?v=pNEbTTRIXWc>

***Harish Mysore – Sr. Director, IEEE India Operations***



## IEEE India Council Lifetime Achievement Award

**Late Shri F.C. Kohli**

First Indian IEEE Region 10 Director  
Founding Chair, IEEE India Council  
Founder CEO, TCS

Faqir Chand Kohli was the founder, and the first CEO of TCS Tata Consultancy Services, India's largest Software Services Co., and the company that brought the Indian IT industry to light at a global level. In 2002, he was a recipient of the Padma Bhushan, India's third-highest civilian honor, for his contributions to the Indian software industry. He is addressed as the "Father of the Indian IT Industry", for his contributions to the establishment and growth of the Indian IT industry. He is also the author of the book titled "The IT Revolution in India", a book that covers the history, issues, and social implications of the IT field. The IT industry of India was left with an empty void by his demise on 26 November 2020. On December 10, 2020, late FC Kohli was awarded IEEE India Council Lifetime Achievement Award posthumously at TIE Global Summit, held virtually in Hyderabad.

*The IEEE India Council Life Time Achievement Award 2020 bestowed on Shri F.C Kohli was personally handed over by Prof.SV Kulkarai, VC, Awards, to Mrs. Kohli on 10th February 2021. Its was indeed great moment for all of IEEE India members.*

*Mr.Antony Lobo , Ex-India Council Secretary and Mr.Abhay Phansekar, Vice Chair-Industrial Development, IEEE India Council also facilitated this event.*





## LM in Focus

**Mr. RK Asthana**

Chair - Life Member Committee, IEEE Region 10  
Ombudsman, IEEE India Council

Can you please share with us some of the most remarkably influential forces in your career at IEEE that have inspired you in your life and why?



When I graduated in 1969 from IIT, BHU, there was no IEEE in India. IEEE made its way into India in 1976 as India Council & Sections like Delhi followed by Bombay & Bangalore. I changed my job in 1975 and moved from Bombay to Delhi. Dr. Harbans L. Bajaj persuaded me to Join IEEE around 1980. To start with I got picked up as Treasurer of Power Engineering Society, Delhi Section & continued for 4 years. Based on Power Engineering Society experience, I got into the Delhi Section as Treasurer. Then Dr. Bajaj moved from BHEL to NTPC, followed by Chairman CEA & ex-officio Secretary GOI, Member, Appellate Tribunal for Electricity & so on but our IEEE association continued. I continued to be associated with him in the Delhi Section, India Council and Region 10.

I had been Treasurer for many IEEE Conferences like Coal Fired Boilers, Trends in Computers, Managing Projects in Borderless World, Personal Wireless Communication, twice India Councils ACEs held at Delhi, Two TENCONS held at Delhi, Two PEDES held at IIT, Delhi & so on. Had been Chair of some Conferences like ACEs, Indo Pak Conference & other Conferences organised by Institution of Engineers. I have been continuing with the Delhi Section since 1988 & India Council since 1990. I served both OUs in many positions like Secretary-cum-Treasurer, Treasurer, Chair and Ombudsman and various Committees. I got into Region 10 ExCom in 1997 and served as Conference Coordinator (1997-1998), Industry Relations Coordinator (2011- 2012), Chair, Life Member Committee (2020). Now in the current term I am serving as Chair, Life Member Committee for 2021-2022. I have always enjoyed serving as an IEEE volunteer, especially in the Delhi Section and India Council. However, my experience as volunteering for Region 10 and MGA, gave me a complete perspective of IEEE. I served MGA - A&A Committee Member for 3 years (2008-2010) & am now R 10 Chair, LM Committee. The various challenging assignments in IEEE inspired me so much and gave me fulfilling experience and gainful engagement. I also continue to be a Life Member of "Institution of Plant Engineers" and Fellow of "IETE".

We all have walked paths that we believed we could have walked differently. If you could re live your entire IEEE Journey, is there anything that you'd do differently?



We do so many activities as IEEE Volunteers and each one does it in its own unique way. I am no exception. However, if one wants to revisit the same for most of the activities/challenges, no records are traceable in Section/Councils. In order to document all important events/history of India Council from the beginning, I had collected/compiled many important details/information using my personal records, past Newsletters, records sent by old veterans like Late H. Kalyanasundaram, MOMs etc. but I find no place to store for benefit of new incoming Officers / Members. I have collected and compiled many details like Past India Council Officers from its inception (1976 onwards), India Councils annual Conferences (ACEs / INDICONS) starting from 1974, Copies of earlier MOUs with other professional bodies in India like IE, IETE etc., TENCONs (region 10 Conference) held in India, India Council Bylaws starting from inception & all subsequent amendments, All previous IC Newsletters from 1978 onwards, List of all Region 10 Directors from India, List of Region 10 "Outstanding Volunteers Award winners" from 1995 onwards & so on. I strongly feel the need of a History Committee in Sections and Council to document various historical data for the benefit of newcomers and store at a place accessible to at least all IEEE Officers.



Given the amount of experience you possess, we are sure you have truckloads of memories and experiences that must have shaped you for the better. Keeping that into consideration what would you say is the best part of Volunteering/Working with IEEE in your personal experience?

The best part of volunteering in IEEE is freedom to perform. Each & every one cannot choose what he will do & what not. So IEEE only decides portfolios for individual Officers in ExCom and then how to handle & manage activities depends on one's personal approach. While planning & execution, automatically one always envisages the best way to achieve success, in the most economical & time saving mode and plans for maximum benefit to IEEE Members. Needless to say Volunteering in IEEE is purely driven by individuals desire to do something for the benefit of members. Since volunteering is not a paid job in IEEE, only those individual volunteers who have passion to do something great to enhance personal professional gains and can spare time out of their personal life. In my opinion unless your family also supports you for such Volunteer activities, it is not possible to achieve any great results.



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COVID-19 impacted the lives of students, teachers and professionals alike. A sudden shift to digital platforms and the burden of adjusting to a new normal was experienced by all. What lessons have you learned during the pandemic?



Covid had impacted every one's life but most affected were those who lost their livelihood and daily wage earners. Shifting to digital platforms. I feel it is quite easy for new generations, who are already used to it but difficult to old timers like me. Personally I am happy that I could adjust to new platforms for various activities. I feel comfortable now and need not run anywhere for any activity. In fact Covid Pandemic has come as Boon in disguise.



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Time keeps constantly molding things into something different and unusual. However certain parts remain constant. If you were to describe your entire journey in IEEE in a phrase, what would it be and why?

It was a great journey with memorable experience and IEEE gave me various opportunities to learn and grow. I have worked with many wonderful volunteers around the world and made several friends. I always feel proud to be a member of Delhi Section and enjoy volunteering for the section and council. Mr. Deepak Mathur is a great motivator & during his tenure as Chair, India Council, he turned around the image of India Council, which was ailing due to poor Volunteering and by establishing mutual bonding between Sections & Council, he not only restored its lost image but also put Council on path of Glory by his visionary improvements. I am happy to say that there are continuous significant improvements in India Council by all subsequent Chairs and faith imposed by Sections in India Council is enormous. I am Confident the vision and commitment of the current IC Chair and dedication of his team shall take IC to a newer heights. I wish India Council all success.



## Dialogue with the Young Professionals

**Mr. Archit Goswami**

Immediate past Vice Chair YP, IEEE India Council  
Execom member, IEEE Delhi Section



Your journey with IEEE goes back to your college days, what has been the most important lesson that you have learnt since? How is that skill relevant in your profession today?

I joined IEEE in the second year of my college. The initial thought was to improve my skills and add expertise so reputed to my resume, that it makes my CV look better for job application. But as I indulged more in the society, it helped me improve a lot more. I used to have stage fright. My seniors pushed me to speak in public, and with time I got over it. I learnt how to improve both my hard and soft skills. All these skills and experiences have been relevant in my profession even today. I think if you are afraid of something, face those fears and work hard to improve it.

Volunteering in IEEE activities is a constant commitment. How do you balance it with your profession or education?



During my college days, I used to work for IEEE during the free periods and the gaps as there were not that many workloads. The most important thing is time management. During weekends instead of wasting time, I utilized it for IEEE work. In professional life, it is a bit difficult but the weekends are there. IEEE is a motivating society. Taking out time for it on holidays, gives me a sense of satisfaction. The main aim is to efficiently use all your time and build your skills as much as possible.



Volunteering at IEEE is not just about the technical work, networking but it is also fun, could you share with us some chucklesome moments you had as a volunteer?

I have organized events in both the pre covid and post covid eras. Before covid, the Rajasthan sub section congress, the Delhi section congress, and AISYWLC are the most memorable events I have been a part of in IEEE. There were a lot of fun sessions along with conferences. I got the chance to explore different parts of the country. After covid, all the events shifted to online mode. It was altogether a new experience for everyone. We had late-night team meetings, movie nights, meme competitions, and a lot more. The Domino's Pizza delivery on the last day of the AISYWLC brought in a sense of excitement in every member. To sum it all, we don't remember days, we remember moments.



Can you tell me about an aspect of a volunteer experience that you've really enjoyed, and a part that you wish had been different?

The AISYWLC'20 has been one of the best experiences so far in IEEE. Of course, the experience would have been different if Congress took place in offline mode. But I am glad we reached new heights with it. I had a lot of fun, got the chance to interact with people all over the country. The event was able to ERASE THE BOUNDARIES of states and sections. The networking sessions, the panel discussions, and all the other activities, that too in an online mode has motivated me further. I am really happy to be a part of something so grand and successful.

How was the experience of leading a very diverse group that had members hailing from very different walks of life?



It was a great experience. We got to know people from different areas, with varied mindsets, likes and dislikes, and much more. Despite all the differences, we developed the managing skills to unite different cultures on one single platform. On a personal front, I have made a lot of friends and have learnt from them. I am also glad to say that I have a network at an all-India level. Even though we were different as a team, we all had the same goal, Advancing Technology for Humanity. These friends have become family, and I couldn't have asked for anything more.



**Mr. Vamsi Krishna**

Former Editor ICNL and  
Chair ECIM at IEEE India Council



**If you were to describe your journey with IEEE till this moment in one word, what would it be and why?**

Fortunate. It's been 9+ years since I joined IEEE & I'm fortunate enough to have met so many wonderful people across the globe. If it was not IEEE, I don't think I would have created or built my career the way it is or reached wherever I'm today. All thanks to the wonderful volunteers & inspiring leaders who helped me come this far.

**Being a successful team leader takes a lot of effort, what are key things one should keep in mind while leading a team and according to you what is a metric to deem a successful? team**



Keep your team first and be the leader who would stand up for them. Let them make mistakes, that is the only way anybody ever learns, train them how to make sure a mistake is made only once and never repeated. Keep sharing the critical feedback to them on a regular basis, recognise their efforts for improvement. When you say team: it's each one of them. Don't miss out on anybody. That's a key metric one should always keep in mind while creating teams of global organizations. There is no great leader who is not backed up by a great team.



**You have started your volunteering with IEEE in 2012, could you recall and tell us the most precious memory from these 9 years with IEEE?**

Fortunate. It's been 9+ years since I joined IEEE & I'm fortunate enough to have met so many

wonderful people across the globe. If it was not IEEE, I don't think I would have created or built my career the way it is or reached wherever I'm today. All thanks to the wonderful volunteers & inspiring leaders who helped me come this far.



**You have started your volunteering with IEEE in 2012, could you recall and tell us the most precious memory from these 9 years with IEEE?**

Ah, the list goes out to a book. But one of the crucial one was when I received the 2019 MGA Young Professional Volunteer Award and my mentors were kind enough to pick my call at 4:30AM in the morning. When I told them what I got myself into, I was amused by their excitement & not to miss out the love of 500+ delegates cheering my name at the IEEE AISYWLC 2019 (All India Student Young Professionals Women in Engineering Life Members Congress) for the successful completion of the congress. I'm truly indebted to them & would gladly live with it for the rest of my life.

**What attracted you to volunteer for the Newsletter team in 2020?**



Should I say opportunity in disguise? Well, it's almost the case. I was aware that along with being the editor of a Newsletter that goes out every quarter of the year to all the members of IEEE in India, it was going to be a bull of a challenge to revamp the entire look. I'm a pro at challenge taking, but the Newsletter was one such challenge that affirmed me and I was the youngest too to take up that role. In a short time I was able to set a standard which could be modified through the years. If you ask me more, I would credit it to my team, who made the experience so lively that this challenge felt a little easy. They were my Rockstars, not just them, all the teams I'd worked over the last 9 years are Rockstars.



**Could you share the three key lessons that you have imbibed from volunteering at IEEE?**

- Patience: Don't take up everything that is offered to you, that's how you get poisoned. Take it at a slow pace, volunteering is not as easy as one thinks. It's something not asked of you, but you contribute at your will.

- Team Work: Believing in working together, cause when you walk alone you can reach a little, but when you walk together you might walk a mile more than decided.
- Perseverance: Keep moving forward, don't get discouraged or stopped at any point of time. Remember that Time Waits for None. Keep building that passion to be ahead of time, always.



**Mr. Sabarinath Pillai**

VC YP, IEEE India Council



**Volunteering is both fun and enlightening, but it's surely time consuming and hectic sometimes. What's your driving force?**

Very true; volunteering is both fun and enlightening indeed. At the same time, even though certain tasks seem herculean otherwise, when performed in the company of like-minded volunteers who share the same vision, seem enjoyable and lovable. At the end of the day, the sense of accomplishment; the sense of pride in having contributed to society and the sense of accomplishing one step closer to who I really am, all in the company of people who share the same vision, is indeed the driving force.

**As you scaled various positions in IEEE, who has been the one person whom you looked up to as your mentor and could you tell us about this person and how he created an impact?**



Ouch! Now this is a very difficult question to answer. Well, to pinpoint one person is likely not possible; but to mention one, I would always say My Students! That might seem confusing at first, to be mentored by students! Well, the art of right questioning is what I feel has been a good mentorship I've received. With the right question asked, the right answer gets to be received. As the Buddhist saying goes, the teacher is ready when the student is.



IEEE can take you places, and in literal terms IEEE does take one to various places. What have been the destinations IEEE has taken you to and which one is your favourite?

Well, going places is indeed for some activity; and the experience or exposure one receives from the activity in itself is more advantageous than the travelling component. Well the fun component in travelling also exists when done with friends, irrespective of the destination! It is the journey that matters! Again, in this post COVID situation, travelling is restricted. A place I would want to travel to and see is the Giant Metre-wave Radio Telescope (GMRT), Pune, which recently received the IEEE Milestone!

What was your greatest strength that helped you as a volunteer?



Well, I would say my family does not question me giving time to volunteering activities which I could otherwise spend with them !! Just kidding; I would say the strength is it the nice company, the peers, the experience, the exposure and of course the sense of accomplishment at the end of the activity, the gratitude from that comes from that one person who got some benefit out of the activity we just spent time and energy on, is in itself the strength!



What are the key skills that you picked up as a volunteer at IEEE?

I would any day say leadership skills; which I could use back in my day job! Well, that in itself is the greatest benefit of volunteering! You use the skills and experiences you get to explore and experiment in your regular job and vice versa!

## SHRI PRALHAD P CHHABRIA AWARDS

Hope Foundation in association with IEEE India Council, WiE, IEEE Pune Chapter has instituted the Shri Pralhad P Chhabria Awards as a tribute to the Founder President. These awards honour young women who have been working towards the betterment of society and the nation and hail from any of the SAARC Countries. The ceremony took place on 8-9 th March 2021. The Annual Awards consist of a total prize money of Rs. 3.5 Lakhs (Rupees Three Lakhs Fifty Thousand Only), a medal and a citation. There are four categories of the Awards

**Best Outgoing Student – Winner - Deeksha M S**

**Best Outgoing Student – Runner Up - Annesya Banerjee**

**Best Woman Professional – Winner - Dr Anupama Ray**

**Best Woman Professional – Runner Up - Dr Lavika Goel**

## JURY PANEL – BEST OUTGOING FEMALE STUDENT



### 1) Prof(Dr.) Rajasree M S

*Vice Chancellor*

*A P J Abdul Kalam Technological University*

Dr. Rajshree is an experienced Managing Director with a demonstrated history of heading an institution which focuses on Computing and IT based academics, research and development

with strong industry focus and promotion of Entrepreneurship initiatives. She is skilled in Large scale software system design and architecture. She is an active academician and researcher with a Doctor of Philosophy (PhD) focused in Computer Science and Engineering from Indian Institute of Technology, Madras.

### 2) Dr Deepa Venkitesh

*Professor,*

*Department of Electrical Engineering, Indian Institute of Technology Madras*

Dr. Deepa graduated with M.Sc. Physics, University of Kerala, 1995 and Ph.D. from IIT Bombay 2008. Her notable accolades include the Young Faculty Recognition Award,





# IEEE Women in Engineering



IITMadras, 2012, Senior Member, The Optical Society, and Recipient of the "International Visitor Program" by the Dublin City University, Dublin, Ireland, among others.



### 3) Dr. Ganesh Natarajan,

*Executive Chairman and Founder of 5F World and Global Talent Track & Skills Alpha*

Dr. Natarajan is the Executive Chairman and Founder of 5F World, a platform for Digital Start-ups, Skills and Social Ventures in the country. He is also Founder of Global Talent

Track and Skills Alpha, co-founder of two Indo-US Joint Ventures – Kalzoom Advisors and the Center for AI and Advanced Analytics. Dr. Natarajan has a Masters' in Industrial Engineering from NITIE Mumbai, PhD from IIT Bombay and AMP from Harvard Business School. He has received the Distinguished Alumnus Award of IIT Bombay and NITIE and has been recognized by EY and the Asia Pacific HR Forum for excellence in technology entrepreneurship and people-centric leadership.

## JURY PANEL – BEST WOMAN PROFESSIONAL (EARLY CAREER)

### 1) Dr. Tessy Thomas

*Distinguished Scientist,  
Director General (Aeronautical Systems)*

Dr. Tessy Thomas is a scientist and Director General of Aeronautical Systems and the former Project Director of the Agni IV missile. She is the first woman scientist to ever lead a missile



project in India earning her a reputation as the Missile Woman of India. Dr. Tessy Thomas is the recipient of many prestigious awards including Lal Bahadur Shastri National Award for Excellence in Public Administration Academics and Management-2012; DRDO Agni Award for Excellence in Self-Reliance – 2001; DRDO Award for Path breaking Research/Outstanding Technology Development-2007; DRDO Scientist of the Year Award- 2008; DRDO Performance Excellence Award for Agni-4 in 2011; DRDO Performance Excellence Award for Agni-5 in 2012



## 2) Dr. R K Shevgaonkar

*Professor Emeritus  
IIT Bombay*

Raghunath Shevgaonkar is an inventor, academician, liberal thinker, and teacher, he has worked in higher education in India for more than three decades. He served as the vice

Chancellor of Bennett University, University of Pune and Director of IIT Delhi. He has helped found the Centre for Distance Engineering Education, and played a key role in commissioning one of the world's largest Decameter Wave Telescopes at Indian Institute of Astrophysics and Raman Research Institute, Bangalore.

## 3) Mr. Vishwas Mahajan

*Founder - Whizible. Com  
EC Member and Chairman - Startups at MCCA,  
Pune*

Vishwas Mahajan, Founder of Whizible. com - Project Services Automation SaaS Platform, Entrepreneur and Angel Investor. He is also

passionate about helping young entrepreneurs and facilitating leadership in organizations. He is associated with MCCA Pune as a Board Member. He has served as Past President and GC member of TIE Pune Chapter and ex-Trustee TiE Global Board.



## Winners' Testimonials

### CATEGORY 1 – BEST OUTGOING FEMALE STUDENT



## Deeksha M. S

*Winner of Shri Pralhad P Chhabria Award for  
Best Outgoing Student – 2021*

"I am extremely honoured and humbled on receiving this prestigious award. I am grateful to the Hope foundation and IEEE India Council for choosing me. I also thank my professors, my

# IEEE Women in Engineering



research guides and my peers for helping me develop a prospective career. I promise to uphold the objectives of HFRC and continuously strive towards aiding the society and women community in their endeavours and career enhancement in the fields of science and technology. I aim to invest the prize money to fund my doctoral studies and in serving the society through newer organizations to encourage young girls by providing exposure to helpful resources."



**Ms. Annesya Banerjee**

*Runner Up of Shri Pralhad P Chhabria Award  
for Best Outgoing Student 2021*

I am profusely thankful to the Hope Foundation, IEEE India Council, IEEE Women in Engineering (WiE) Society, and every other person associated with the selection committee for considering me worthy of this highly prestigious award. It is a great opportunity for students like me to devote our knowledge, skills, and expertise to take forward Shri Chhabria Sir's vision of empowering young women in Science, Engineering, and Technology. I want to dedicate this award to my parents, teachers, well-wishers, fellow learners, and co-workers, who have constantly influenced me to become who I am today. I believe this award not only applauds my academic and research achievements. But it also celebrates these people, whose continuous support, encouragement, motivations, and appreciations are behind all my successes. I would always remain grateful to them for their contributions to my life.

## **CATEGORY 2 – BEST WOMAN PROFESSIONAL** (EARLY CAREER)

**Dr. Anupama Ray**

*Winner of Shri Pralhad P Chhabria Award for Best  
Woman Professional (Early Career) 2021*

Thank you Hope Foundation and IEEE India Council for giving me such respect. I am truly honored to receive it. Thanks to the jury and the organizers for all their valuable time in the entire selection process. I am extremely grateful to my parents for instilling the dream of being a scientist. I will always remain thankful to my professors, my seniors,



# IEEE Women in Engineering



colleagues, and my friends for helping me build and live that dream. They are all winners of every accolade that I earn forever. Thank you.



## **Dr. Lavika Goel**

*Runner Up for Shri Pralhad P Chhabria Award for Best Woman Professional (Early Career) 2021*

I am extremely happy and feel honored to receive this prestigious award and I am really thankful to IEEE India Council-HFRC to bestow this honor on me. I am thankful to my parents for providing me all the support I needed to grow professionally and to reach here. I will surely try to improve myself further in future and come up even better in future. I am a Ph.D., in Machine Learning and Artificial Intelligence so if I can do anything for the betterment of the society around me, then I would definitely try to contribute towards it using the concepts of AI/ML which I have learnt in the last ten years of my professional and academic career. I am recently working on the development of a national level agriculture App and on design of chatbots, and question answering systems using deep learning. Thanks a lot again to IEEE-HFRC for this prestigious award!



# Award Nominations

We believe good work deserves to be acknowledged and appreciated. Here are some IEEE R10 awards open for nominations. Apply before May 30th !

## IEEE Region 10 Awards

1. R10 Outstanding Volunteer Award  
<https://www.ieeer10.org/wp-content/uploads/2021/03/R10-Outstanding-Volunteer-Award-Nomination-Form.docx>
2. R10 Humanitarian Technology Activities (HTA) Section Award  
<https://www.ieeer10.org/wp-content/uploads/2019/03/R10-HTA-Section-Award-Nomination-Form.docx>
3. R10 Humanitarian Technology Activities (HTA) Volunteer Award  
<https://www.ieeer10.org/wp-content/uploads/2019/03/R10-HTA-Volunteer-Award-Nomination-Form.docx>
4. R10 Educational Activities (EA) Group Award  
<https://www.ieeer10.org/wp-content/uploads/2021/03/CFN-R10-EA-Group-Award-Nomination.docx>
5. R10 Educational Activities (EA) Volunteer Award  
<https://www.ieeer10.org/wp-content/uploads/2021/03/CFN-R10-EA-Volunteer-Award-Nomination.docx>
6. R10 SAC Outstanding Volunteer awards  
<https://docs.google.com/document/d/1m6luVIMz8NQMWz77-bm6giqHkSkFtRQO47UtRh43kF0/edit#heading=h.ncy3fldfnl8>
7. R10 SAC Outstanding Student Branch Award  
<http://bit.ly/SACSBSubmission2021>

## R10 WIE Affinity Group Awards

1. IEEE Region-10 WIE Section Affinity Group Award  
<https://wie.ieeer10.org/2021-wie-ag-award/>
2. IEEE Region-10 WIE Student Branch Affinity Group Award  
<https://wie.ieeer10.org/2021-wie-ag-award/>
3. IEEE Region-10 WIE Outstanding Student Volunteer Award  
<https://wie.ieeer10.org/2021-wie-volunteer-award/>
4. IEEE Region-10 WIE Outstanding Professional Volunteer Award  
<https://wie.ieeer10.org/2021-wie-volunteer-award/>

## R10 Young Professional Awards

1. R10 YP Outstanding Section Affinity Group Award  
<https://yp.ieeer10.org/region-10-young-professionals-outstanding-section-affinity-group-award/>
2. R10 YP Outstanding Volunteer Award  
<https://yp.ieeer10.org/region-10-young-professionals-outstanding-volunteer-award/>

## R10 Life Members Awards

1. R10 Life Member (LM) Outstanding Volunteer Award  
<https://www.ieeer10.org/awards-recognition-committee/>



## AISYWLC 2020



All India Student, Young Professionals, Women in Engineering, Life Members Congress was organized by IEEE India Council and hosted by IEEE Delhi Section at Chitkara University from 19th to 20th and 26th to 27th December 2020. The annual flagship event themed "Erase The Boundaries", revolves around how India Cultures, Sciences and Methods are being

used around the world. The event administers a platform to young professionals, academicians, scholars, entrepreneurs and technocrats from divergent fields and careers to show up together and share a common podium. The Congress provides a path to connect with industry experts, successful business professionals and experts working on latest technologies. Various workshops, seminars led by ace professionals contribute to the diverse opportunities for business networking, professional development and personal growth. The event witnessed various dignitaries and IEEE professionals; **Dr. Aloknath De (CTO - Samsung India)**, **Dr. Gulshan Rai (First Chief of Cyber Security - PMO)**, **Mr. Puneet Mishra (Secretary - IEEE India Council)**, **Prof. Akinori Nishihara (Director - IEEE Region 10)**, **Shri H. L. Bajaj (former IEEE Director - IEEE Region 10)**, **Dr. Takuo Suzuki (YP Chair - IEEE Region 10)** and many other renowned personalities.



The event began with a panel discussion conducted in collaboration with IEEE WIE in the presence of **Ms. Emi Yano (WIE Chair, Region 10)**, **Dr. YVS Laxmi (WIE Vice Chair, IEEE India Council)** and **Dr. Rachana Garg (Executive Vice Chair, IEEE Delhi Section)** and a plenary session by **Dr. Aloknath De (CTO, Samsung India)**. Further, another panel

theme "Erase the Boundaries" was held which included professionals like **Ms. Karamjyoti Dalal (Bronze medalist, IPC World Para Athletic Championship)**, **Ms. Simran Khosla (Fitness and Lifestyle Coach)**, **Ms. Denise Vorraber (Forbes 30 under 30 entrepreneur)** and **Ms. Madhura DasGupta Sinha (Founder of Aspire For Her foundation)**. Day 1 concluded with the Mock Shark Tank Competition which was aimed to enlighten the spirit of entrepreneurship and innovation by giving a platform to young entrepreneurs.

The next day commenced with the first virtual YP chairs' meet and interaction with R10 Young professional committee chair. The agenda of the meet was to connect all the YP Chairs across India with India Council and Region 10 level for better future



prospects. It was then followed by LM Track of AISYWLC'20 which was a Panel Discussion where Life Members had to share their experience and expertise with fellow LMs and other participants. A Student Branch Storyboard Contest was also held to motivate student branches. Next a Keynote Session on the Evolution of Cyber Security (an Indian perspective) through the years was highlighted by Dr Gulshan Rai. Day 2 concluded with a panel discussion where the role of the next generation in Space, Technology & Exploration (Under ComSoc, PES and PELS) was discussed.

26th December, 2020 began with a session on rich flavours of IEEE : the spirit of Volunteerism, the heart of Leadership and the Vision of 2021. It was followed by the second LM Track of AISYWLC'20: Session on Life Members Activities. A panel discussion on Entrepreneurship: Journey to Success via Failures by **Mr. Dharamveer Singh Chouhan (Co-founder & CEO, Zostel), Mr. Avelo Roy** (Managing Director, Kolkata Ventures), Dr. Shalini Lal (Co-Founder, Unqbe) and Mr. Glenn Block (Principal PM Lead, Microsoft) was conducted in which an internship opportunity was also presented to delegates. To conclude the day a Keynote Session on Managing Disruption in a Post-COVID World was held by Mr. Seenivasan Balasubramanian (CEO - IAMPL, Rolls Royce). **Managing Director, Kolkata Ventures), Dr. Shalini Lal (Co-Founder, Unqbe) and Mr. Glenn Block (Principal PM Lead, Microsoft)** was conducted in which an internship opportunity was also presented to delegates. To conclude the day a Keynote Session on Managing Disruption in a Post-COVID World was held by Mr. Seenivasan Balasubramanian (CEO - IAMPL, Rolls Royce).



December 27, 2020 the last day of AISYWLC began with the third LM Track of AISYWLC'20: Life Members Affinity Group Meet & Presentation (Under LM) and a Panel discussion - 5G: The Way Ahead (Under ComSoc, PES and PELS). Before the closing

ceremony, the event AISYWLC witnessed a showstopper of it's events, i.e. AISYWLC Got Talent and Beatboxing performance by the judge of AISWYLC Got Talent, Mr Abhishek Bhaskar. The session came to an end with the moderators announcing the winners. Following that, the IEEE India Council Chair of Student Coordination Team, Mr Archit Goswami spoke about the team of AIYWLC'20 and Mr Utkarsh Singh took both positive and critical feedback from the delegates. The night was then followed with a spectacular show of Comicstaan 2 winner - Mr. Aakash Gupta. The event was a huge success and was facilitated by the sum efforts of 80+ volunteers, 12 Life Members, 15+ Professors, 10+ Young Professionals, and 700+ delegates from all over India.

# INDICON 2021

INDICON is the flagship annual international conference of the IEEE India Council. With plenary sessions, keynote addresses by reputed academicians, tutorials, workshops, Student Paper contests, industry exhibits, and stalls, and most importantly, high-quality presentations from the best of the researchers in India, no effort is being spared to make INDICON 2021, the best so far. The 18th IEEE India Council International Conference (INDICON 2021) is being organized by IEEE Kolkata Section from 19 – 21 December 2021, at IIT, Guwahati, Assam.

This event will provide a perfect platform for researchers and engineers both from academia and industry to deliberate upon. They will be free to disseminate their innovative ideas and opinions on emerging issues in the field of electrical, electronics, and computer engineering as well as information technologies. Prospective authors are invited to submit their papers on the following tracks. The scope of the conference includes but not limited to the following broad areas:

**Track 1:** AI and Data Science

**Track 2:** Robotics and Cybernetics

**Track 3:** Devices, Circuits, and Systems

**Track 4:** Control and Instrumentation

**Track 5:** VLSI and Nanotechnology

**Track 6:** Power, Energy, and Power Electronics

**Track 7:** Computational Biology and Biomedical Informatics

**Track 8:** Antenna and Microwave Techniques

**Track 9:** Communications, Networks, IoT

**Track 10:** Computer Architecture and Embedded Systems

**Track 11:** Signal Processing and Multimedia

**Track 12:** Security and Privacy

The conference proceedings will be submitted for possible inclusion in the IEEE Xplore® digital library. INDICON 2021 will feature both contributed and invited papers. The best papers will be selected from the contributed papers for awards. For any conference-related query, send an email to [indicon2021@gmail.com](mailto:indicon2021@gmail.com).





# IEEE India Council Execom Member Achievements



**Dr. K.R. Suresh Naik**  
Chair, IEEE India Council



**IEEE MGA  
Achievement Award-2020**  
Thank you for the kind gesture of donating  
the prize to IEEE India Council



**Mr. Deepak Mathur**  
Director, IEEE Region 10



**Board Co-ordinator,  
IEEE HAC 2021**



**Dr. Y. Vijayalata**  
Vice Chair - Student Activities,  
IEEE Hyderabad Section



**Member of  
Engineering Projects in Community  
Service (EPICS) committee,  
IEEE Education Activity Board (EAB)**



**Mr. Puneet Mishra**  
Vice Chair  
Professional Activities



**Corresponding Member,  
IEEE Industry Engagement Committee**



**Ms. Sadhana Attavar**  
Vice Chair - IETA  
IEEE Bangalore Section



**Assuming charge  
Director VITM,  
Bangalore**



**Mr. Deepak Mathur**  
Director, IEEE Region 10



**Connection Quest 2021  
perfect score by  
IEEE President**



**Prof. Sushmita Mitra**  
Chair, IEEE Kolkata Section



**JC Bose fellowship 2021**



**Prof. Debabrata Das**  
Chair Elect, IEEE India Council



**Director,  
IITB (2021)**



**Prof. Sivaji Chakravorti**  
Advisor, IEEE India Council



**Vice President,  
Indian National Academy  
of Engineers 2021**



**Prof. Purna Gaur**  
Treasurer, IEEE India Council



**Director, NSUT,  
East Campus (2021)**



**Dr. Sri Niwas Singh**  
Immediate Past Chair,  
IEEE India Council



**Secretary Candidate  
IEEE PES 2021**



**Dr. Rachna Garg**  
Chair,  
IEEE Delhi Section



**Prof. Manik Lal Das**  
Chair,  
Subscription Co-ordination,  
IEEE Gujarat Section



**Sarada Jayakrishnan**  
Chair,  
IEEE Kerala Section

**Winners of Quiz,  
during R10 Meeting**

# INDIA COUNCIL ACTIVITIES REPORTS

## IEEE INDIA COUNCIL STUDENT ACTIVITIES COMMITTEE REPORT



IEEE India Council Student Coordination Team began with its term in January 2021. The first official meet was on 25th January 2021. The virtual meeting was presided over by Dr Vijayalata Reddy, Vice-Chair-Students Activities Committee IEEE India Council, Archit Goswami, Advisor-IEEE India Council SCT, Sneha Chandran, Chair- IEEE India Council SCT, Sai Prasath, Vice-Chair- IEEE India Council SCT and Ritvik Bansal, Vice-Chair- IEEE India Council SCT. The Student Coordination Team of 2021 boasts members from 12 different sections across India.

The first webinar of the IEEE India Council Student Coordination team for 2021 was conducted successfully on

the topic “Webinar on Membership Development and Retention” on 2nd February 2021. The speaker of the session was Dr Rajesh Ingle, Vice-chair- Membership Development. On 27th February 2021, the Student Coordination team for the session formed. The following day in a virtual meet, the team was introduced to the India Council. The next meet was held on 4th March 2021. The agenda of the meet was to discuss the ideas of each sub-team.

## IC EDUCATIONAL ACTIVITIES

### WEBINAR ON “Exploring the Educational Resources of IEEE” Organized by IEEE India Council



IEEE India Council organized a Webinar on “Exploring the Educational Resources of IEEE” on 27th Feb 2021. Around 85 members participated in the program. The event started with the welcome address by Dr. D. Devaraj (Vice-Chair of IC India Council, Educational Activities). Dr. S K Nair (Chair, IEEE India Council) felicitated the program with his opening remarks. In the first session, Mr. Sohaib Sheikh (Chair, Awards and Recognition Committee, IEEE EA Board) briefed

about the various funding opportunities and the IEEE Educational activities award. It was followed by a presentation on “Educational Resources of IEEE” by Dr. Preeti Bajaj (Chair, R10 Educational activities committee). The last session was handled by Dr. Dhanukumar

Pattanashetti (Senior IEEE Client services/University Partnership Program Manager), on the topic of "Inspiring Innovation and Research with IEEE Publications". The program ended with a Vote of Thanks by Dr. D. Devaraj.

## IEEE INDIA COUNCIL EDUCATIONAL ACTIVITIES WEBINAR



IEEE India Council Educational Activities Team organized a Webinar on "IEEE Educational Activities" on 26th March 2021 through online mode. Around 150 members participated in the webinar. The event started with the welcome address by Dr. D. Devaraj (Vice-Chair of Educational Activities, IEEE India Council). Dr. S K Nair (Chair, IEEE India Council, and Ms. Rajshree, Secretary, IEEE India Council) felicitated the

The speakers Dr. S. K. Ramesh, Dr. Supavade Aramvith, and Dr. Vijayalatha were introduced by the IEEE IC Chairman Dr. S K Nair. The program ended with a Vote of Thanks by Ms. Ankita Chandavale, Educational Activities Volunteer, IEEE India Council.

## SECTION WISE REPORTS

### 1. Bombay Section

#### APSCRIPT



IEEE APSIT SB, along with IEEE BS Computer Society and IEEE BS SAC conducted a 48-hour hackathon, ApScript. The event registered 500+ participants. The event was supported by 100+ campus ambassadors from various colleges in IEEE Bombay Section, and 26 Sponsors and Community Partners. Prizes worth INR 10,00,000 were given to the deserving awardees. The hackathon was divided into three rounds and was completed over a course of 2 days (7th and 8th Feb 2021).

#### PRO SPEAKS-ENTREPRENEURSHIP AND INNOVATION

IEEE BS SAC in collaboration with MDC, conducted a webinar on entrepreneurship and innovative approaches in the corporate world. PRO SPEAKS had Dr. Sureendra Koushik, innovation director at Volvo group and Director of IEEE TEMS, along with Himani Naresh, VP of strategy at Discovery Inc. as the honorable speakers. The webinar was held on 13th February 2021 and was successful and smoothly conducted. The speakers guided the participants on how to give innovative



strategies in companies as employees and how to boost entrepreneurship skills. The event was recorded having 100+ registrations with positive feedback.

## INTERVIEW MASTERCLASS

Interview masterclass, a 2-week course on special approaches and secrets to giving the best performance at interviews to set the best foot forward is being conducted by IEEE BS SAC, with the help of our expert trainer, Mr. Atirakshit Bhatt. The course aims to help TE and BE students associated with IEEE, gain the best benefits of insider secrets of recruitment processes. The course duration is 25th Mar - 24th Apr 2021. The trainer is

making the best use of multiple social media interfaces to give the participants the correct guidance. 200+ participants have been registered for the career-defining 2-week program.

## LIGHTSPEED MUN- BASED IN THE FUTURE



Lightspeed MUN web conference was conducted by IEEE VSIT SB in association with Model United Nations on 30th January 2021. The motive of the event was to let the participants picture a world 50 years into the future, based on the ethical use of superintelligence and artificial consciousness. The event had 8 country representative delegates of MUN. The conference has 3 stages, and the top 3 scoring delegates were given cash prizes. The conference was supervised by Dr. Sarika Chouhan, Chair- IEEE BS SAC, and Branch Counselor IEEE VSIT SB.

## IEEE BOMBAY SECTION SIGNATURE CONFERENCE (IBSSC - 2020)



IEEE BOMBAY SECTION SIGNATURE CONFERENCE – IBSSC -2020, was held invirtual mode during December 4-6, 2020. While the theme of this Conference was“Frontiers of Technologies: Fuelling Prosperity of the Planet and People”, the tracks of theconference were Industry 4.0, Blockchain, Electronics Surveillance, EducationTechnology. Out of the 97

submissions from industries, academia, and research institutions, 48 were accepted for oral presentations and inclusion in conference proceedings. The conference had keynote

speeches every day and included names like Mr. Ramanan Ramanathan, Dr. Tessy Thomas, and Mr. Ramesh Menon. Dr. Mangesh Chansarkar, Mr. Franxan Stanley, Mr. Abhay Phansikar, Dr. Bheesette Satyanarayana, Mr. Anand Gharpure, Prof. Vidy Potdar, Ms. Debajani Mohanty, Prof. Shridhar Iyar, Mr. Ajit B Chaudhary, and Dr. Jagannath Nayek were the speakers invited for the Expert talk in the event. The conference was attended by 136 participants.

## SIGHT AFFINITY GROUP BOMBAY SECTION



IEEE SIGHT Chapter floated its first and most awaited event named "Budding Innovators". Planning of this event started from September 2020 with a number of webinars titled "Call to Arms", "Learn from the Leaders", "Volunteer Speaks" and "Mentoring Sessions" with eminent speakers from the HAC and SIGHT. Proposal writing competition named "Budding Innovators". In

total 18 groups participated out of which final 6 groups evaluated for pre-evaluation and final evaluation. Rubrics of the same were redesigned considering the proposal submitted for the global SIGHT funding. Out of the team, the best three teams got selected as the winners.

## 2. Delhi Section

New ExeCom of the section under leadership of Prof. Rachana Garg as chair took charge of the section proceedings from 14th March, 2021 onwards. North Cap University conducted a 15 days coding camp, a large number of keynote addresses on some of the most contemporary topics of research like, 'IT in Biomedicine', 'IT in Deep Learning' and 'IT in Harsh environments' were delivered by some of the most senior members of the section.

## ANNUAL VISITORS' PROGRAM ON RECENT TRENDS IN ELECTRONICS AND COMMUNICATION.

On March 20, 2021, talks on "Electronics for Environmental and Healthcare Sensors" talk, "Advancement in AlGaIn/GaN HEMT Technology For High Power, High Frequency Device Applications", "Radar Technology and Trends", "Recent Trends in Antenna Design" were handled by Prof Ajay Aggarwal (Sr. Principal Scientist, Group Head, CSIR-Central Electronics



Engineering Research Institute, Pilani), Dr. D. S. Rawal (SSPL, Delhi), Dr. Ashutosh Kedar (Scientist F, Radar Antennas, Microwave Division, LRDE, DRDO, Bangalore), Mr. Rajeev Jyoti (Distinguished Scientist, Space Application Center, ISRO, Ahmedabad) respectively. The event was conducted online with a participation count of 115 members.

## WEBINAR 5.0



On 4th January, 2021, Antennas and Propagation Society of Indian Institute of Technology, Jodhpur conducted a Distinguished Lecture Program on "Challenges and Solutions in Massive MIMO Antenna Design". The event was conducted online with a participation count of 149 members.

## 8TH R K VIR MEMORIAL LECTURE

On 4th January, 2021, 8th R K Vir Memorial Lecture was organized by Life Members' Affinity Group, Delhi Section. 141 participants were present for the online event.

## EVINCE

On 9th January, 2021, Evince: The Spectrum of IEEE MSIT kick started their orientation sessions that spanned 2 days. 560 people attended the inaugural event online.

## AARAMBH

On 26th January, 2021, IIT Delhi organized AARAMBH, the B-plan competition through online mode. 210 contestants took part in the completion.

## HANDS-ON WORKSHOP ON UI DESIGNING:

On 31st January, 2021, the WiE AG of Northcap University conducted a Hands-on Workshop on UI Designing. 426 learners were present for the online workshop.

## WEBINAR ON OCEAN COLOR REMOTE SENSING:

On 10th February, 2021, the WiE AG of Northcap University conducted a webinar on Webinar on Ocean Color Remote Sensing. 268 participants attended the online workshop.

## NCU CODATHON

On 20th February, 2021, Northcap University in collaboration with IEEE ADGITM conducted Codathon 2021. The online competition involved 268 contestants.

## WORKSHOP ON IOT USING RASPBERRY PI & PYTHON

On 20th February, 2021, National Institute of Technology, Srinagar conducted a one-day online Workshop on IoT using Raspberry Pi & Python. The event had a total of 175 participants.

## ROADMAP TO COMPETITIVE PROGRAMMING

On 24th January, 2021, WiE AG of Manipal University, Jaipur conducted "Roadmap to competitive programming". 170 attendees were present for the online event.

## 15 DAYS OF CODE DAY QUIZ 2

On 4th and 12th March, 2021, Industry Application Society of Northcap University organized "15 Days of Code Day Quiz 2". The event was attended by 618 participants.

## NATIONAL ROAD SAFETY WEEK

On 9th February, 2021, Desh Bhagat University celebrated "National Road Safety Week" online with 115 other people.

## 3. Hyderabad Section

### IEEE HYDERABAD SECTION AGM-2021

The IEEE Hyderabad Section, India organized its Annual General Body Meeting (AGM - 2021) on January 24, 2021 from 10.00 AM to 2.30 PM at Hotel Taj Vivanta, Begumpet in the Hybrid Mode. Dignitaries like Mr. Amit Kumar (Chairperson), Mr. Bala Peddigari (Secretary), Dr. MGPL Narayana (Former Chairperson), and N Venkatesh (Nominations Committee Chair) took part in this event. Dr. Deepak Mathur, Director, Region 10 joined the event through Cisco WebEx. The event also saw Mr. BL Deekshatulu being awarded with India Council Life Time Achievement Award, and the new ExeCom i.e. Mr. Srinivas Jasti, Mr. R. Balasubramanian, Mr. Mohammed Arifuddin Sohel, and Mr. Bala Prasad Peddigari took charge as the Chairman, Vice Chair, Secretary, and Treasurer respectively.

### WIE-AG ACTIVITIES

### INTERNATIONAL WOMEN'S DAY CELEBRATIONS: BECOME THE AUTHENTIC LEADER – YOUR ENVISION



A Panel Discussion on "Become the authentic leader – Your Envision" was organized by IEEE Hyderabad Section WIE AG with the theme of "Empower woman, empower the human community" on March 7th at 6.00PM. This event witnessed the presence of eminent woman leaders from IEEE Hyderabad section participating in the discussion.

## **FROM LEARNING TO DEEP LEARNING:**

IEEE Hyderabad Section Women in Engineering Affinity Group (WIE AG) and Education Society in association with IEEE Kolkata Section organized a webinar on the occasion of International Women's Day titled "From Learning to Deep Learning" by Dr. Sushmita Mitra, on 8th March 2021 from 2.00 P.M to 3.30 P.M IST through WebEx.

## **WOMEN IN LEADERSHIP:**

IEEE Hyderabad Section WIE AG in association with IEEE VNR WIE and IEEE VNR SPS presented a talk on "Women in Leadership: Achieving an Equal Future", followed by Talk on "Edge Computing and its Advantages" by Mr. N. Venkatesh, Sr. Director, Silicon Labs, and former chair of IEEE Hyderabad Section, on 8th March 2021 at 6 PM.

## **LEARNING AND EMPOWERING YOURSELF IN A RAPIDLY CHANGING WORLD**

Department of ECE, Matrusri Engineering College, Saidabad, Hyderabad in association with IEEE Hyderabad Section WIE AG organized one day online Guest lecture on "Learning and Empowering yourself in a rapidly changing world" on behalf of IEEE-WIE Women In Engineering Affinity Group as a part of Women's day celebrations on 8th March, 2021 at 10.30am – 12.30pm. The speaker was Dr. Sandhya Kode, Chief Mentor and Founder Director of EnhanceEdu, IIT Hyderabad.

## **WOMEN IN TECHNOLOGY: CHALLENGES AND HOW TO OVERCOME THEM**

IEEE Hyderabad Section Women in Engineering Affinity Group in association with IEEE Women in Engineering Affinity Group under IEEE Vardhaman SB organized a webinar titled "Women in Technology: Challenges and how to overcome them" on 9th March 2021 from 6.30 PM. The event was handled by Ms. Kankana Choudhury, Practice Director, Evoke Technologies.

## **WOMEN LEADERSHIP CHALLENGES**

IEEE Hyderabad Section WIE AG in association with IEEE WIE AG GCET presented a webinar on "Women Leadership Challenges" by Ms. Lakshmi Bayya (Rtd.) Deputy Director, National Remote Sensing Center on 12th March 2021 at 11 am.



## 4. MADRAS SECTION

### IEEE MADRAS SECTION ANNUAL MEET



The Annual General Meet of IEEE Madras Section 2020 was held on February 20, 2021, between 12.30-5.00 PM. Dr. N. Kumarappan (IEEE Madras Section Chair), Dr. D. Devaraj (Secretary), Dr. Joseph Gladwin (Treasurer), Dr. D. Nirmal (Chair of Awards & Recognition Committee), Dr. Thangaprakash (Ex-com member of the IEEE Madras

Section) took part in the Annual Meet.

### TECHNOLOGY SOLUTIONS FOR GOVERNMENT SCHOOLS TO FIGHT AGAINST COVID 19



IEEE HAC funded project titled "Technology Solution for Government Schools to Fight against Covid 19" was implemented by the Kumaraguru College of Technology, Coimbatore and ERNET India, under MeitY, Government of India for the following schools.

1. TNGR Higher secondary school, Coimbatore
2. Lady Willingdon Higher secondary school, Triplicane, Chennai
3. Government Higher secondary school, Anakapathur, Chengalpet.

The project was inaugurated by Dr. C. Usharani, Joint Director, Department of Education, Government of Tamilnadu and was handed over to the government schools by the honourable chairman Dr. N. Kumarappan, IEEE Madras section on March 11, 2021.

### INAUGURATION OF IEEE STUDENT BRANCH ACTIVITIES AT NIT

The inaugural ceremony of IEEE SB was conducted on 28th January 2021. The ceremony was glorified with the presence of Mr. Aravind Raj A, Dr. N. Kumaresan, Mr. Kannadasan K, Dr. M. P. Selvan, and Mr. Alok Kumar. A series of technical talks were also included during the

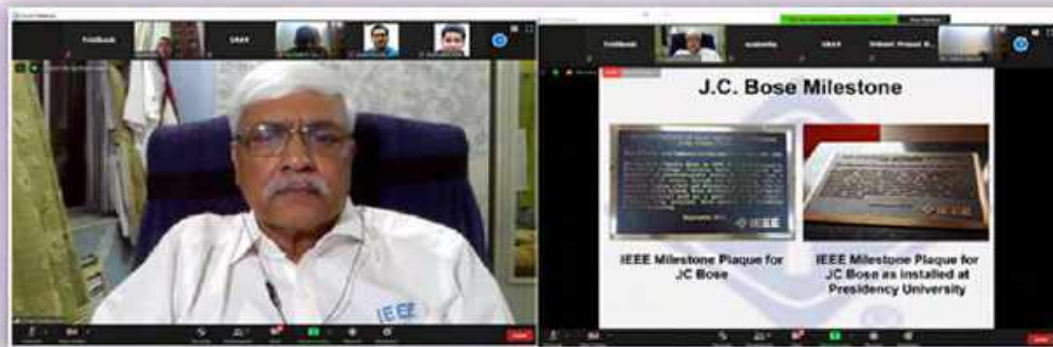
inauguration. The list of speakers included Mr. Aravind Raj A, Dr. V. S. Srinivasan and Mr. Shino Shibu.



## 5. IEEE Kolkata Section

### IEEE MILESTONE LECTURE

On 4th March, 2021 at 7:30 PM (IST) IEEE Kolkata Section organized IEEE Milestone Lecture through online virtual platform. The talk was delivered by Prof. Sivaji Chakravarty, FNAE, FNASc, AvHumboldt Fellow Vice-President, Indian National Academy of Engineering - 2021, Professor Jadavpur University, Kolkata, India. A total of 16 participants attended the event.



## FROM LEARNING TO DEEP LEARNING

On 8th March 2021 from 2.00 P.M to 3.30 P.M IST IEEE Kolkata Section in association with IEEE Hyderabad Section Women in Engineering Affinity Group (WIE AG) and Education Society organized a webinar on the occasion of International Women's Day titled From Learning to Deep Learning. The session was handled by Prof. Sushmita Mitra. A total of 125 participants were present at the event.



On 14<sup>th</sup> March, 2021, IEEE CIS Kolkata chapter in association with IEEE Kolkata Section jointly organized a DL delivered by Prof. Mengjie Zhang, University of Wellington on "Evolutionary Machine Learning". The DL was hosted online with an attendance of 124 participants.

## AN OVERVIEW OF MACHINE/DEEP LEARNING FOR ARTIFICIAL INTELLIGENCE SOLUTIONS WEBINAR

On 20<sup>th</sup> March 2021, IEEE Kolkata Section organized a webinar on "An Overview of Machine/Deep Learning for Artificial Intelligence Solutions". It was a proud privilege for the section to have esteemed speaker Professor Lawrence O. Hall, Distinguished University Professor and Co-Director Institute for Artificial Intelligence + X, Department of Computer Science and Engineering, University of South Florida, Tampa, Florida, USA 2021 IEEE Vice President for Publications, Products and Services. A total of 152 participants were present at the event.



## IEEE DISTINGUISHED LECTURE SERIES 2021

On 18<sup>th</sup> March 2021, IEEE Rourkela Subsection via the outreaching activities of Educational Committee, IEEE Biometrics Council organized IEEE Distinguished Lecture Series 2021 titled "Face Recognition: Learning biological deep networks" through WebEx. It was delivered by Prof. Massimo Tistarelli, University of Sassari, Italy. 239 participants from over 5 countries attended the DL series.

## PANEL DISCUSSION: MENTAL WELL BEING IN THE NEW NORMAL

On 13<sup>th</sup> March 2021, IEEE WIE Kolkata Section in association with IEEE Communication Society Kolkata Section organized a panel discussion on "Mental Well being In The New Normal" through virtual platform. A total of 112 participants attended the event.



## 2021 IEEE Second International Conference on Control, Measurement and Instrumentation

During January 8-10, 2021, IEEE Joint CSS-IMS Kolkata chapter, India, organized the second version of its flagship event, "2021 IEEE Second International Conference on Control, Measurement and Instrumentation". The conference consisted of a keynote speech by Calin Belta, Boston University, USA, two plenary lectures as well as the regular technical sessions. 41 papers were presented throughout 3 days, divided into 7 tracks. 210 participants attended the conference.

## DARE TO DREAM TALK SERIES

IEEE Women in Engineering Kolkata section had started "Dare to Dream", a talk series on Indian Women who had ventured into STEM careers more than 50 years ago. The inaugural episode of the series was held on 6th February 2021. The talk "Life and Work of Prof. Rajeswari Chatterjee: A Pioneer in Microwave Engineering" based on the research by Ms. Ishani Hazra, was delivered by Prof. Prasanta Kumar Basu. A total of 123 participants attended the event.

## LIGHT OF LEARNING

During March 20-22, 2021, IEEE EDS Center of Excellence, HITK, India, organized an activity "Light of Learning". Led by the coordinator of the Center Dr. Mousiki Kar, volunteers reached out to 23 school going underprivileged children, aged between 6 and 14 years. The children were given school supplies and books.

## FROM LEARNING TO DEEP LEARNING



On 13th March 2021 IEEE Kolkata Section Geoscience and Remote Sensing Society Chapter organized a One Day Virtual Workshop on Remotely Sensed Data Analysis. Four speakers delivered their lectures. Dr. Saurabh Das of IIT Indore has delivered a talk on "Machine Learning in Space Science: Sun and Space Weather". Prof. P. K. Nanda of SOA University, Bhubaneswar talked on

"Effects of low latitude aeronomy on satellite-based precise point positioning" and Prof. B. S. Daya Sagar of ISI Bangalore talked about "Morphological Interpolations in Geoscience and Remote Sensing". A total of 126 participants were present at the event.

## YOUTH AND TECHNOLOGY IN INDIA

On 12th January, 2021, IEEE CAS Kolkata Chapter in association with Narula Institute of

Technology, Agarpara, Kolkata organized through virtual platform a wonderful and memorable National Youth Day (Youth and Technology in India). Inaugural address was given by Prof. (Dr.) M R Kanjilal. The following address were given by Dr. J K Mandal, IETE Kolkata, and Dr. J K Roy, IEEE CAS, Kolkata Chapter. The webinar was attended by 135 students, and 30 faculties and staffs.

## INTERNATIONAL CONFERENCE ON MICRO/NANOELECTRONICS DEVICES, CIRCUITS AND SYSTEMS (MNDCS-2021)



During 29-31 January 2021, IEEE Nanotechnology Council Chapter in association with IEEE ED NIT Silchar Student Branch Chapter, Assam, India and Department of Electronics and Communication Engineering, National Institute of Technology Silchar organised "International Conference on Micro/Nanoelectronics Devices, Circuits and Systems (MNDCS-2021) (Virtual Mode)". The

conference aims to foster the theme the theme through eight keynotes, four invited talks, and 56 oral presentations of research articles in the most relevant areas allied to the theme of the conference. Total participants for the conference were 100.

# Technical

## DEEP LEARNING MEETS THE INTERNET OF THINGS

Suja A. Alex - Assistant Professor, Dept. of IT, SXCCE, Nagercoil

J.Jesu Vedha Nayahi - Assistant Prof., Dept. of CSE, Anna University Regional Campus-Tirunelveli

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As the modern world is ruled by mobile devices, researchers are keen to introduce deep learning networks that can keep up with the advancements. A study of a variety of similar deep learning systems was conducted by a partnership between academia and industry, and the findings are encouraging. When facebook recommends new friends, netflix recommends movies and even when Ola or Uber reliably predicts when the driver will arrive and what route is best to reach the destination on time, they all use "deep learning"- a complex algorithm that gathers data about you and your environment to provide better recommendations and service. Recent developments in deep learning have drastically altered how computers process human-centric content including images, voice, video and audio. Applying deep neural networks to IoT devices could result in a new generation of applications capable of complex sensing and recognition tasks, enabling a new domain of interactions between humans and their physical surroundings. The best questions to ask if mobile apps are to effectively apply deep neural network technology, the researchers raise certain questions.

- What deep neural network architectures are most efficient at processing and fusing sensory input data for a wide range of IoT applications?
- How can deep learning models resource usage be minimised so that they can be deployed effectively on resource constrained IoT devices?
- How can confidence measurements in deep learning predictions for IoT applications be computed correctly?
- Finally how can the use of labelled data in learning be reduced?

To conclude, deep learning neural networks must be capable of gathering data from a variety of IoT devices, as well as being energy efficient, accurate, and able to run with minimal data labels, if they are to be used effectively in mobile apps.

### SYSTEM BRINGS DEEP LEARNING TO IOT DEVICES

Deep learning is becoming increasingly common. This branch of artificial intelligence is in charge of curating the social media and serving google search results. Deep learning will soon be able to check your vitals or adjust your thermostat. Deep learning neural networks may be taken to new and much smaller locations such as the tiny computer chips in wearable medical devices, household appliances and 250 billion other items that make up the Internet of things. Despite limited memory and processing power, the MCUnet framework designs compact neural networks that

provide unparalleled speed and accuracy for deep learning on IoT devices. The technology has the potential to expand the IoT universe while also saving energy and enhancing data protection. The findings will be discussed at the Conference on neural information processing systems.

#### THE INTERNET OF THINGS:

The IoT was born in early 1980s. Students of Mellon University connected a coca-cola machine to the internet. Before trekking from their office to make a purchase, they decided to use their machines to make sure the system was stocked. It was the first internet-connected appliance in the world. Everyday objects have become increasingly networked it to the growing IoT since that Coke machine came into picture. This includes everything from wearable heart monitors to smart refrigerators. IoT devices often run-on microcontrollers that are simple computer chips with no OS, minimal processing power and less than one thousands of memory of a smartphone. As a result, tasks requiring pattern recognition, such as deep learning are difficult to run locally on IoT devices. IoT data is often sent to the cloud for complex analysis, rendering it vulnerability to hacking.

#### SYSTEM ALGORITHM CODESIGN

It's not easy to build a deep network for microcontrollers. Established neural architecture search techniques start with a large pool of potential network architectures based on a predefined template, then find the one with the highest accuracy and lowest cost over time. Although the approach is reliable, it is efficient. However, since microcontrollers are so thin, it has been difficult to apply these techniques directly to them. A neural architecture search method that creates custom-sized networks was created. TinyNAS's customizable design allows it to create compact neural networks with the best possible output for a given microcontroller with no extra parameters. A microcontroller also needs a lean inference engine to run the tiny neural networks. A traditional inference engine has some weight in the form of instructions for tasks that it can or may not perform. For a laptop or smartphone, the extra code is not a concern, but it could easily overpower a microcontroller. TinyNAS assisted the researchers in developing their inference engine. Tiny engine generates the requisite code for tinyNAS personalized neural network to run. Weight code is removed, resulting in a reduction in completion time. Tiny engines compiled binary code was between 1.9 and 5 times smaller in community tests. Community test than similar microcontroller inference engines from Google and ARM. Tiny engine also has time saving features such as in place depth wise convolution which reduces peak memory conception by nearly half. Hand's team put MCUNet to the test after code designing TinyNAS and tiny engine.

#### HIGH POTENTIAL

Personal information like personal health data is less likely to be hacked when data is analysed locally. Han envisions a MCUNet enabled smartwatch that not only detects the user's heartbeats, blood pressure and oxygen levels, but also analyses and explains

the data. MCUNet may also be able to introduce deep learning to IoT devices in automobiles and areas with restricted internet connectivity. MCUNet's small computational food print also means a small carbon footprint. "Our big dream is for green AI ", Han says, noting that training a broad neural network absorbs enough carbon to equal five car's lifetime emissions. On a microcontroller MCUNet will use a fraction of the energy. "Our ultimate goal is to build powerful, tiny AI with less computational resources, human resources, and data" Han says.

## UNDERSTANDING BLOCKCHAIN TECHNOLOGY

Shruti Singh - SIES Graduate School of Technology

Blockchain is a decentralized technology which is used by a global network of the computer to manage cryptocurrency transactions easily like Bitcoin. However, what is bitcoin? It is a virtual or cryptocurrency used for transactions without the involvement of a centralised bank. This technology keeps records and are hard to tamper or hack into. Blockchain has wide uses and isn't solely in online transactions but health-care, real estate, digital balloting, video games, supply chains and many more. Blockchain is the brainchild of Satoshi Nakamoto in 2008. The peer-to-peer association makes it easy to manage.

Nakamoto conceptualized the primary blockchain in 2008 from where the technology has evolved and found its way into many applications beyond cryptocurrencies. Satoshi Nakamoto released his first whitepaper about the technology in 2009. In the whitepaper, he provided details of how the technology was well equipped to boost digital trust given the decentralization aspect that meant nobody would ever be in control of something.

There are 4 types of chains:

**Public blockchain:** Any user with an internet connection can freely create transactions with anyone. Examples are Bitcoin and Ethereum blockchain.

**Private blockchain:** This blockchain is invite-only space. You can join only when invited by the administrator. These blockchains aren't open peer-to-peer clusters.

**Hybrid blockchain:** A hybrid blockchain features a coalition of centralized and decentralized features. The precise workings of the chain can vary based on which portions of centralization decentralization are used.

**Sidechains:** A sidechain is a secondary blockchain connected to the main blockchain with a two-way peg. Sidechains may have their solidary protocols, which could be completely different from the mainchain's protocol.



These blocks have time-stamps and are impossible to backdate. A blockchain is a distributed ledger hospitable to everyone. The most fascinating fact about this is once data is recorded in a block it can never be tampered or hacked. This peer-to-peer system is secure and features a unique identification technique that helps the parties to keep a note on the transactions. The method of "proof-of-work" helps in the creation of new blocks and maintaining the chains by adding the blocks to respective chains. It's just like a distribution centre. When someone joins a network, they can obtain the details of that chain anytime. But they can be part through a legitimate ID only. This helps in the security of the details.

Each computer in the blockchain network has its copy of the blockchain, which implies that there are thousands, or in the case of Bitcoin, uncountable copies of the same blockchain. Although each copy of the blockchain is indistinguishable, spreading that information across the global network of computers makes the data more difficult to govern. With blockchain, there isn't a single, decisive account of events that can be manipulated. Instead, a hacker would need to exploit every copy of the blockchain on the network. This is why it is called a "distributed" ledger.

The applications for blockchain and identity management are extensive. For Example, blockchain could potentially be used to aid in maintaining voter information and guaranteeing the proper functioning of the electoral process. Blockchain could be used to securely and efficiently transfer user information across platforms and systems. The technology may even be accustomed to maintain and protect records of real estate ownership, titles, and more.

Most cryptocurrency deployments involve public blockchains permitting anyone to participate. Most corporate blockchain deployments utilize a private ledger limiting access and permission. While cryptocurrencies have a legitimate place in the blockchain world, they by no means cover the vast possibilities behind this rising technology. Monetary services have one of the greatest rationales for utilizing blockchain. The inherent security and immutability directly tie into key needs for the banking sector and insurance companies. American Express appears to grasp these aspects and has taken steps in a few different areas of their business to deploy blockchain. American Express participated in Ripple's global payment network and launched a blockchain for membership prizes.

Eventually, blockchain is as much a political and economic hypothesis as a technological one. Blockchain technology provides a brand-new way to consider how we tend to agree on things. For the first time, multiple untrusted parties can create and agree on one single source of truth, without the use of a mediator. The technology's implications for mediators and corporate players are therefore potentially huge. As the landscape evolves, the future of blockchain will likely take on forms that are however to be fancied.

# INTEGRATED VEHICLE HEALTH MANAGEMENT (IVHM)

## - An overview

Dr. Vijaylakshmi S. Jigajinni - BEC-IEEE, North Karnataka Sub section

IVHM concept was first introduced in 1992 by NASA in a report entitled "research and technology goals and objectives for IVHM". IVHM defines a mechanism that enables the efficient operation and maintenance of the aircraft system. The process includes a collection of data, analysis, and decision-making procedure for safe and continuous operation. The primary goal of IVHM is to put into operation an advanced diagnostic, prognostic, and health management method that enables real-time measurement and continuous monitoring of functional vehicle health. The maintenance operations help reduce the occurrence of unpredicted faults as the health management of the system provides primary detection of failures. The word 'vehicle' in the IVHM acronym is associated with any vehicle systems, extending from spacecraft to aircraft, cars, trucks, ships, trains, helicopters, submarines, etc.

IVHM is a combination of diagnostic and prognostic systems. With the development of IVHM technology, the application of new sensors, advanced diagnostic reasoning algorithms, artificial intelligence technology, and system integration technology has promoted the implementation of IVHM technology. The application of IVHM is the inevitable development trend of the next generation aircraft health management, it is important for aircraft to improve security, maintainability, performance and reduce the operation cost. According to the statistical data of aviation accidents, 10% of the serious accidents are due to aircraft faults. Airlines spent \$31 billion (approx. 220 crores) on the maintenance of the aircraft each year. The commercial sector of the aerospace industry has shown that nearly 95% of aircraft lifecycle costs are attributable to maintenance activities. The reports of the US government show that the operating cost compared to the maintenance cost of the aircraft exceeds the actual buying price by more than ten times

Aircraft maintenance is more difficult with the onboard system highly integrated and complex, due to the lack of a comprehensive system to fault diagnosis and fault prognosis techniques. How to focus on aircraft level health condition management, improve aircraft safety and maintenance, prevent and reduce fault has been researching hotspot issues. IVHM aims to provide an automatic System Health Management scheme to assess vehicle health in coordination with operation and maintenance. It helps to monitor the system continuously and predict the remaining valuable life of fault components and uses this data to improve the system performance. Availability of appropriate failure prognostics capability and remedial actions would prevent crashes, accidents and provide safe maintenance and repair process. IVHM ensures operation safety that aids in the cost-effective performance of the vehicle. Generally, IVHM is a quality management mechanism that provides continuous enhancement of legacy vehicle systems by changing requirements and needs. It plays an important role to improve the safety of the aircraft and enhance the maintenance and logistical efficiency and combat effectiveness, to reduce the life cycle cost.

# Non-Technical

## HOW WOULD A CRICLIFE BE!?

Viswesh Parameswaran - IEEE Kerala Section

Criclife is lived by someone for whom 'life is cricket' or 'cricket is life'. Cricket has been an integral part of most people's lives and is surely something that connects us despite and beyond the borders of language and ethnicity. Especially in the gloom of COVID-19 pandemic, IPL matches were a blessing. Since people didn't want to miss the IPL matches, the decrease in COVID cases was visible when the matches were played.

If we deeply analyze cricket or any other sport for that matter, we can find various life lessons hidden in it. According to me, when life is related to cricket, there is a better understanding of life. So here I am presenting 10 conclusions from my Criclife.

1. People are like length balls outside off. You must know which all to leave alone, as the ones which are destined to come in will make an impact anyway.
2. Friends are like edges of the bat. Some evade fielders, while some go straight to them. Some carry over the ropes while some drag you back onto the stumps.
3. Some people are like full-length deliveries that tempt you to play your shot but must be left alone as it doesn't deserve your reaction.
4. Judging a person based on looks is like judging a match only by its scorecard. Never tells the complete story.
5. Helping people without need is like, only you running desperately for your partner; which will result in your run-out.
6. Subjects of courses are like bowlers. They know exactly what to do with each person.
7. Some lectures are like middle overs of an ODI. They may be match-defining but boring to watch.
8. The day before the announcement of results is like batting on 99 when the match is stopped due to rain.
9. Good hostel food is like a ball in the slot. If not capitalized, don't know when you will get the next one.
10. Life is like batting. It doesn't matter if you were beaten; you can still play your best shot the very next ball.

My Criclife started when I heard someone say that the world is a ground without fielders and stumps, and life is the bowler throwing opportunities to you. The absence of fielders and stumps essentially meant that you can't get out unless you run away from the pitch, so just keep playing, be happy, and enjoy the game called life.

# Beginner's guide to learning Ethical Hacking and Cyber Security

The pandemic brought a whole new level of dependency on digital platforms. As our dependency on these platforms became a new normal, the number of cyber attacks also witnessed a spike. Even before the pandemic cyber security was a matter of genuine concern, but in the digitized times demand for cyber security professionals and ethical hackers is to surge in the years to come. We are aware that ethical hacking is one of the most vendible career options amongst young techies. What makes it even more lucrative of an option is the fact that a very complex technical skill set is not required to start learning and exploring in this arena. Through this simple five pointer guide you can kickstart your journey to becoming a certified ethical hacker or cyber security professional. Without further adieu, let's start learning !

## I Some Prerequisites to get started with Ethical Hacking

Ethical Hacking and Cyber Security are confusing for many beginners and this question always remains in the mind of anyone who thinks of stepping into these domains. Here are a few technical requirements which you need to get yourself familiarised with before you actually begin your journey through this field. These will make your first few steps easier, yet you do not need to be an expert at any of this.

### Networking:

- OSI, TCP/IP models
- TCP/UDP Differences and Flags
- Three-way handshake(SYN, SYN & ACK, ACK)
- Ports and IP, how it works
- Mostly used port numbers
- Public and Private addresses
- Definitions of DHCP, ARP and how they work
- Subnetting(Just introduction is excellent)

### Cryptography:

- Descriptions of Symmetric and Asymmetric encryptions
- What is Public key and Private key
- Hash and Encryption difference
- HTTPS and why to use SSL/TLS

### Programming:

Programming is not compulsory, but is always preferable.

Other:

Get familiar with basic Linux commands.

Using Putty or SSH

How Server/Client works in a networking model.

How HTTP protocol works

## II The right websites

Now that you know the prerequisites, you also need to know where to gather them from. The internet is inundated with courses, guides and information. Simple googling “ethical hacking course online” will only land you in a sea of options, swimming out of which will not be a very pleasant experience and might even demotivate you. Here are top 5 websites that you can begin your exploration with :-

SecurityTube

Cybrary

Hack This Site

Hacking-Tutorial

SecTools

## III Free Cybersecurity Videos and Webinars, yes please !

Yes, you read that right. As a beginner you do not have to go for paid courses right away. With these free webinars and videos you can start with the basics and strengthen your knowledge of core concepts.

TED Talks on cybersecurity

Stanford University's free cybersecurity webinars and videos

BrightTALK's webinar stream

BeyondTrust's webinar offerings

## IV Cybersecurity Books and Papers, there you go...

Only when you read from the right resources, are you able to register the important concepts. Here are some free resources that you can start reading. Most of these contain self explanatory guides and blogs that will help you conceptualize better.

Center for Internet Security  
O'Reilly Media  
CompTIA

## V Online Courses to learn ethical hacking from scratch.

No, you do not need a lot of expertise to understand what your online course instructor is teaching. If your experience says otherwise, then you are studying from the wrong courses. Here are some courses for absolute beginners.

1. StationX – The Complete Ethical Hacking Course Bundle (Paid – Beginner)
2. Udemy – Learn Ethical Hacking From Scratch (Paid – Beginner)
3. Cybrary – The Art of Exploitation (Free – Intermediate)
4. EH Academy – The Complete Cyber Security & Hacking Course (Free – Beginner to Intermediate)
5. Offensive Security – Metasploit Unleashed (Free – Intermediate to Advanced)
6. Coursera – Cryptography (Free – Intermediate)
7. Introduction to Ethical Hacking and Cyber Security

Learning a new concept is like going on an adventure. So much awaits to be explored, studied and attempted. We hope that this guide helps you initiate your first steps in the endless world of cyber security and ethical hacking. Always remember, Practice while you learn. Learn while you practice.

# MEET OUR TEAM !

Liked what you saw and read? Meet the team behind it all. Our journey of making this newsletter was a fun filled one. We hope you felt likewise while reading it.

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COUNCIL

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