

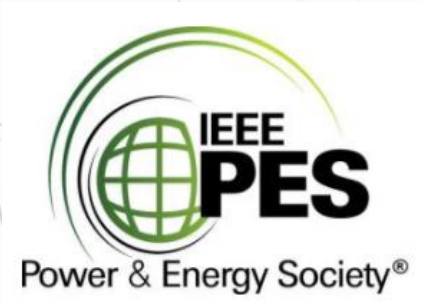
TENCON 2021

Smarter, Cleaner, Secure, and Resilient Living

7-10 December 2021
Auckland, New Zealand

*IEEE Future Directions Guiding Smarter,
Cleaner, Secure, & Resilient Living*





Future Architecture
of the Network
TE WHĀTUNGA HIKO





IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE and its members inspire a global community to innovate for a better tomorrow through its more than 400,000 members in more than 160 countries, and its highly cited publications, conferences, technology standards, and professional and educational activities. IEEE is the trusted "voice" for engineering, computing, and technology information around the globe.

IEEE, an organization dedicated to advancing innovation and technological excellence for the benefit of humanity, is the world's largest technical professional society. It is designed to serve professionals involved in all aspects of the electrical, electronic, and computing fields and related areas of science and technology that underlie modern civilization. IEEE's roots go back to 1884 when electricity began to become a major influence in society. There was one major established electrical industry, the telegraph, which since the 1840s had come to connect the world with a data communications system faster than the speed of transportation. The telephone and electric power and light industries had just gotten underway.

TENCON is a premier IEEE international technical conference which has been conducted in region 10, to bring exciting discoveries, knowledge & understanding together. TENCON 2021 has been themed inspired by the IEEE Future Directions platforms both graduated & ongoing. This year's TENCON is organized by IEEE NZ North Section, designed to be an online event hosted from Auckland, New Zealand. The conference will be held from 7-10 December 2021. Please join virtually to hear & engage with the exciting & innovative programs that is being planned.

Hosting TENCON 2021 in Auckland (Virtually) with a focus on IEEE Future Directions will provide IEEE members & non-members access to the best knowledge, resources & opportunities in emerging technologies, & address public fear & challenges faced by the city as innovative technology are introduced & embraced. The theme has been selected to give a strong international & local flavour. The technical tracks will align with the strong traditional technical themes of IEEE like signal processing, robotics, biomedical, communications, computers, power & energy, power electronics, software etc. along with new emergent & exciting IEEE Future Directions platforms.

Some key highlights of this annual conference include:

Tutorial Sessions

- Keynote presentations from practice leaders in the field
- Presentation sessions for idea sharing & discussion.
- Students/Young Professionals Networking Forum.
- Online Trade booths & themed panel sessions

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Kia ora All:

On behalf of the 33rd IEEE Region 10 (R10) International Conference, **TENCON 2021** Organizing Committee, it is my privilege and great pleasure to extend a warm Kiwi welcome to all delegates, invited keynotes/guests, authors, contributors, sponsors and well-wishers. Many of the attendees from 20+ countries across the globe are across different life-long learning stages like Student, Young Professional, Women in Engineering, Researchers, Professors, Innovators and Professionals. A special welcome to all the special session plenaries. A special welcome to IEEE non-members, some of whom are presenting their peer-reviewed technical contributions and some registered as online attendees

It has been slightly more than 2 years, since this conference journey began with firstly the bid to host TENCON 2021 undertaken by **IEEE New Zealand North Section** when IEEE Region 10 called for hosting proposals from IEEE Asia-Pacific countries. The competition from various venues across Asia-Pacific was intense but we were chosen finally. With the formation of IEEE Region 10, in 1966, New Zealand formed IEEE branch in 1968 and was one of the inaugural Asia-Pacific countries to help form this Asia-Pacific IEEE entity's establishment. Currently, we have almost all the countries of Asia-Pacific in the Region 10 membership, which is the largest IEEE member block collectively outside of North America. Since New Zealand has not hosted the TENCON conference, it was a great opportunity to give back to Asia-Pacific countries the hospitality and gracious of hosting during the 32 other locations where this conference has been held. As part of the bidding process, I would like to take this opportunity to express our sincerest gratitude to Auckland Convention Bureau, who prepared all the bid documents professionally which we strongly believe played a key part for winning amongst very stiff competition from other desirable locations across Asia-Pacific. The members of IEEE New Zealand North and the other entities of IEEE i.e. IEEE NZ South, IEEE NZ Central and IEEE NZ Council, have also been very supportive of securing hosting rights and are delighted for the opportunity to deliver this flagship R10 conference to further the technical advancement of this global membership driven family 'down-under'.

This is the second time after TENCON 2020, that this brand of conference is fully online due to the global pandemic that the world is still battling through. Technical presentations typical of TENCON 2021 have been adapted to suit the online format and scheduled to be friendlier to the various time-zones across Asia-Pacific countries. Delivering TENCON 2021 fully online, has offered us opportunities as well as challenges to continue with the traditional face-to-face program. This naturally meant that the traditional culture and practices of TENCON attendees need to be met along with a blended program that appears seamless and representative to all author and non-author attendees who are representing various countries, institutions/ companies and as individuals. At the outset, we would like to acknowledge the patience and accommodation that each one of you extended before participating in this online conference, as the organizing committee worked through the details and help establish a cohesive and integrated program that hopefully satisfies each one of your expectations and positive experiences.

At the time of publishing this handbook online we have about 250+ attendees from about 20+ countries that are participating across various events during the 4 days. During the actual meeting, we expect some more local participants to register. We have made arrangement to stream freely five of the sessions, to showcase the diverse range of activities that IEEE conducts. Please encourage your friends and family to view them to get a feel for what we do professionally and technically.

The tag line for this conference is “*Smarter, Cleaner, Secure, and Resilient Living*” and activities during the four days of the programming will have 2 industry relevant workshops on future electricity grids and robotics, several engaging digital break-out sessions, 2 Executive Industry Global Panels, 18 Technical Sessions, robotics competition across all educational levels, best paper competition, Region 10 showcase session, and several opportunities to digitally interact with world-wide innovators, experts, technical professionals, researchers and explore opportunities of recognition and peer-esteem through an engaging conferencing platform. The technical tracks we have arranged includes strong traditional technical themes of IEEE like signal processing, robotics, biomedical, communications, computers, power & energy, power electronics, software etc. along with new emergent and exciting *IEEE Future Directions* platforms.

We hope that the 4-day/night online program of events including a special IEEE R10 affinity group session and various online networking activities will provide a roadmap for IEEE Region 10, to inspire new ideas for a collaborative leadership of future technology and platform direction in the coming years. A special thanks to all the volunteers, sponsors and organizers for the preparation and help towards actual conduct of this event. The various teams that have put together TENCON 2021 program are provided in this handbook.

In particular, we would like to thank IEEE Region 10 for their approval to host TENCON 2021 by IEEE NZ North section and for their support and advice during the program preparation and sharing expectation of the industry-academia-research balance expected of this conference.

At this stage, I would also like to say a big ‘Nga mihi’ (Thanks) to our IEEE New Zealand North (NZN) members and volunteers of all categories – IEEE NZN leaders, Regular, Senior and Student Members for being part of the local program that will capture and showcase technical contributions towards challenges, opportunities, experiences and engagements from New Zealand and Australia. There is active participation across the various events from Kiwi engineers, leadership, researchers, affinity groups- ‘Students, Women, Young professionals’ electricity stakeholders across the board and engineering societies that represent the breadth of New Zealand researchers, academics, technologists, practising engineers and science leaders.

On behalf of the organizing committee, I thank you for your participation and supporting TENCON 2021. I wish you all a great event full of new ideas, networking opportunities and showcasing the new technologies and strategies that will shape humanity, environment and living in the coming decades. For those of you who are participating in an IEEE event for the first time, please take time to check out the various IEEE attendees across all professional spectrums attending. As the world opens up, hope to catch up with some of you in future live physical venue-based IEEE conference or event.

Nga Mihi,



Nirmal Nair

General Chair

On behalf of Organizing Committee TENCON 2021



Nirmal Nair
General Chair



Tek Tjing Lie
General Co-Chair



Kate Murphy
Industry Chair



Donald Bailey
Award Chair



Andrew Laphorn
Finance Chair



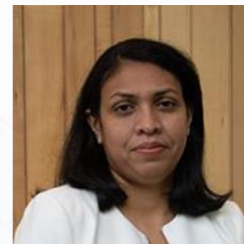
Kevin Wang
Finance Co-Chair



Ramon Zamora
Technical Co-Chair



Ho Seok Ahn
Publications Chair



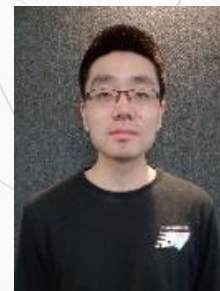
Kosala Gunawardane
Technical Chair



Nurul Sarkar
Publications Co-Chair



Abhinav Rakesh Chopra
Digital Head



Xin Liu
Creative Head



Lakshita Lakshita
WIE and Portfolio Head

On behalf of the TENCON 2021 Technical Organizing Committee, It is our great honour and pleasure to welcome you all to TENCON 2021. We would like to thank all the authors for considering TENCON 2021 as the forum for presenting your research. Without the submitted papers, we would not have an eventful, exciting, and productive global conference!

TENCON 2021 has attracted many experts from industries, academia, research institutions, government agencies, and other institutions representing 15+ countries. Many new emerging researchers who will be presenting their research works are also here among us today. The combination, expert and new emerging, academia and industry, is a strength not just for the conference success, but also for contributing “Smarter, Cleaner, Secure and Resilient Living” in real life.

We have received 250 research papers. It is a big challenge for us to have them reviewed by at least two reviewers to ensure that each accepted paper is up to the expected standard. All the papers are high quality papers and thus we made the toughest decision by only accepting 70% submitted.

We contacted many experts to review the papers. Finally, 114 reviewers from 20 countries have volunteered their time to assess and critique the papers. Some of the reviewers are here with us today. Thank you very much for your significant help! We would also like to extend our gratitude to the reviewers who are not attending this conference. Without the help from all these reviewers, who are present or absent today, we would not have been able to meet the deadlines and finally to organize this conference. All the reviewers have been acknowledged in the next page.

Since the conference is completely online, we are not able to group the papers based on the conference tagline “Smarter, Cleaner, Secure and Resilient Living”. We have grouped the papers into several tracks based on the geographical time zones that suit the authors who will present their respective papers. We made sure that the authors are able to present their papers in their reasonable time zone.

These peer-reviewed accepted papers, made available in the conference proceedings, will be presented in the technical session presentation format. There are 18 technical sessions (two in parallel at a time) with around 7 to 12 papers in each session for three days. Overall, we will have more than 180 papers presented through 18 sessions.

We also would like to thank session chairs for your willingness to take the responsibility. With your help, we believe that the sessions will be well organized and productive.

Thank you very much for attending this conference. We wish that you all have a very exciting and productive conference.

Nga Mihi,

Technical Chairs

Ramon Zamora and Kosala Gunawardane

250+ Attendees from 20+ Countries



Bangladesh	United Kingdom
Brazil	India
Indonesia	Korea, South
Malaysia	New Zealand
Philippines	Singapore
Sri Lanka	Thailand
Australia	United States
Japan	

Total
Presentations
190+

TENCON
2021

IEEE Future Directions Guiding Smarter,
Cleaner, Secure, & Resilient Living

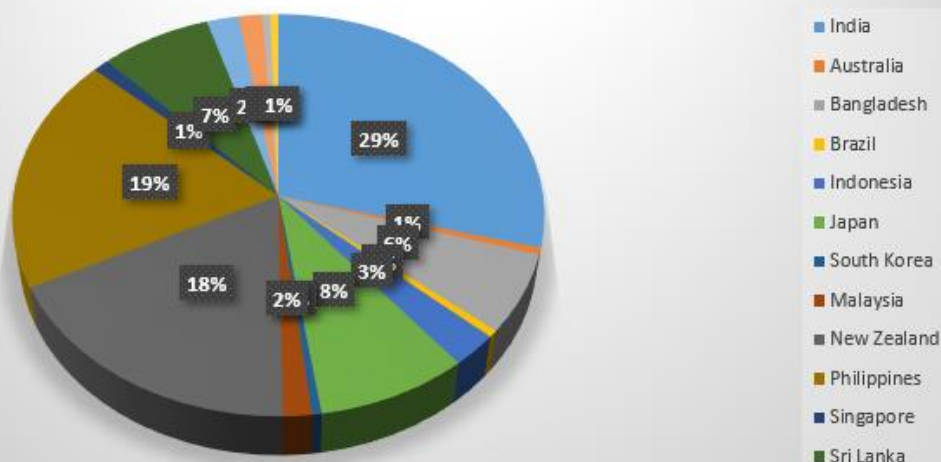


The tag line for this conference is “Smarter, Cleaner, Secure, & Resilient Living”.

Reflecting the theme, the four days of TENCON 2021 program includes.

- IEEE Region 10 track on 7th December 2021.
- Opening Plenary session on 8th December
- Two Workshops on Future Architecture of the Network (FAN) and Robotics.
- 18 Technical Sessions on 10 different themes.

190 papers from 16 countries



Day 1, 7th December 2021

The first day of TENCON 2021 will start with an IEEE R10 tracks consist of an industry track, professional activities, and women in engineering and young professional tracks.

TENCON 2021 IEEE R10 Track	
14:00 – 14:30	Social Chat/Joining the session
14:30 – 14:35	Welcome Address by IEEE NZ North Peter Over
14:35 – 14:45	Opening: IEEE R10 Director-Elect Lance Fung
Industry Track	
14:45 – 14:48	Introduction by IEEE R10 Industry Relations Committee Chair: Sanjay K. Chowdhary
14:48 – 15:15	Session on 'IEEE & Future of 5G Technology' Ashutosh Dutta
15:15 – 15:23	Q&A
15:23 – 15:25	Vote of thanks
15:25 – 15:30	Break
15:30 – 15:35	Introduction by IEEE R10 Professional Activities Chair: Parkash Lohana
15:35 – 16:15	Panel Discussion: Academia-Industry Engagement (1) Dr. Sudeendra Koushik (India) (2) Prof. Dr. Zubair A. Shaikh (Pakistan) (3) Dr. Paulina Chan (Hong Kong) (4) Dr. Alpha Agape Gopalai (Malaysia) (5) Dr. Jane O'Dwyer, Australia – Industry (Australia)
16:15 – 16:20	Q&A
16:20 – 16:25	Vote of thanks
16:25 – 16:30	Break
WIE Track	
16:30-16:35	Introduction by IEEE R10 IEEE R10 Women in Engineering Committee Chair: Emi Yano
16:35-17:20	Journey beyond the horizon - Success story of an incredible woman leader Dr. Piyapan Hannarkin
17:20-17:25	Vote of thanks
17:25-17:30	Break
YP Track	
17:30 – 17:35	Welcome Address Saaveethya Sivakumar, IEEE Region 10 Young Professionals Committee Chair
17:35 – 17:55	Effective Scientific Writing and Publishing Prof Debatosh Guha, IEEE Fellow and Professor in the Institute of Radio Physics and Electronics at the Rajabazar Science College, University of Calcutta.
17:55 – 18:15	A Systematic Guide on Planning and Writing Grant Proposals Prof. Nowshad Amin Professor at College of Engineering, Universiti Tenaga Nasional, Malaysia.
18:15 – 18:25	Q&A
18:25 – 18:30	Closing

Day 2, 8th December 2021

The second day of TENCON 2021 will be start with an opening and welcome address along with the plenary session from a keynote speaker. Later that day, six technical sessions will be held with total of 66 presentations.

Social Chat through Whova Platform

Pre-Conference Welcome

2:00pm-2:30pm, Wednesday 8th December - Whova Platform

The Pre-Conference Meet & Greet will take place virtually on 8th December, between 2:00pm-2:30pm. This is a fantastic opportunity to network with colleagues and researchers. This function is included with all registrations.

Time (NZST)	DAY 2 (8 December 2021) Tentatively 14:30 – 22:30 NZST	
2:30pm-4pm	Opening Address + Welcome Address (Chair) + Plenary Discussion (Cyber Security)	
4pm-4:15pm	Break(15mins)	
4:15pm-5:45pm	Technical Session 1-TS1 (9 presentations)	Technical Session 2-TS2 (9 presentations)
5:45pm-6:15pm	Break(30mins)	
6:15pm-8:15pm	Technical Session 3-TS3 (12 presentations)	Technical Session 4-TS4 (12 presentations)
8:15pm-8:30pm	Break(15mins)	
8:30pm-10:30pm	Technical Session 5-TS5 (12 presentations)	Technical Session 6-TS6 (12 presentations)

List of the presenters in each technical session are detailed below.

Each presenter will have 8 minutes to present and 2 mins for Q&A after each presentation.

Time: 16:15 - 17:45 NZST		Technical Session 1 (TS-01) Chair: Anubha Kalra
Paper ID	Title & Author	
13	Path-Agnostic Network Measurements Using Distributed Sketches Speaker: Radhika Sukapuram	
25	Performance Analysis of Three User Cooperative NOMA Speaker: Shilpa Rao	
48	Classification of Breast Cancer Using User-Defined Weighted Ensemble Voting Scheme Speaker: Ajay Kumar	
71	Performance of Uplink NOMA-MIMO System with Joint DPC-OSIC Detector Speaker: Rahul Makkar	
104	A Fault Diagnosis Technique of SMGFs in k-CNOT Based Reversible Circuits Speaker: Jatindra Kumar Deka	
124	Flood Magnitude Assessment from UAV Aerial Videos Based on Image Segmentation and Similarity Speaker: Ananya Sharma	
210	The Role of Face Embeddings on Classification of Personality Traits from Selfie Images Speaker: V Ramana Murthy Oruganti	
219	Topology Exploration for Long-Distance Communication	
228	Ultrasound-to-Ultrasound deformable image registration for pseudo CT simulation for Brachytherapy treatment planning: A preliminary study on tissue-mimicking phantom Speaker: Anila Satheesh B	

Time: 16:15 - 17:45 NZST		Technical Session 2 (TS-02) Chair: Kosala Gunawardane
Paper ID	Title & Author	
77	Insect Detection and Identification Using YOLO Algorithms on Soybean Crop Speaker: Anurag Singh	
79	Emoji Prediction using LSTM and Naive Bayes Speaker: Ritwik Ranjan	
152	Deep Learning model-based Segmentation of Medical Diseases from MRI and CT Images Speaker: Piyush Kumar	
159	Electric Vehicle Charging Station using Open Charge Point Protocol (OCPP) and oneM2M Platform for Enhanced Functionality Speaker: Shubham Mante	
168	Unsupervised Action Localization Crop in Video Retargeting for 3D ConvNets Speaker: Prithwish Jana	
170	Resource-Conscious High-Performance Models for 2D-to-3D Single-View Reconstruction Speaker: Dhruv Srikanth	
171	SELFIE: A Semantically-Enhanced Load Forecasting Approach with Indirect Estimate of Spatial Influences Speaker: Monidipa Das	
194	Diagnosis of Asthma in Children Based on Symptoms: A Machine Learning Approach Speaker: Subhasish Dhal	
202	Enhancement of PSNR based Anomaly Detection in Surveillance Videos using Penalty Modules Speaker: Sushant Lenka	

Time: 18:15 - 20:15 NZST		Technical Session 3 (TS-03) Chair: Kevin Wang	
Paper ID	Title & Author		
27	Mitigation Technique against Network Isolation Attack on RPL in 6LoWPAN Network Speaker: Santosh Biswas		
64	Automated classification of EEG into meditation and non-meditation epochs using common spatial pattern, linear discriminant analysis, and LSTMSpeaker: Jerrin Thomas Panachakel		
70	Cross-Head Attentive Deep Neural Network for Estimating Left Ventricular Functional Parameters		
91	Vehicle Re-identification in Smart City Transportation using Hybrid Surveillance Systems Speaker: Ashutosh Holla		
100	Cost-Sensitive Bootstrapped Weighted Random Forest for DoS attack Detection in Wireless Sensor Networks Speaker: Deepankar Krishnan		
116	Deep Security Scanner for Industrial Control Systems		
130	Recognition of isolated characters across different input interfaces using 2D DCNN Speaker: Naseem Ahmad		
143	A Novel Initialization Approach for Fuzzy C-Means algorithm using Unsupervised Random Forest Method Speaker: Ashish Phophalia		
182	Comparative Study of Long Document Classification Speaker: Vedangi Wagh		
192	LifeLens: Deep Learning Based Application for the Visually Impaired Speaker: Aakash Tomar		
236	C3HAC: A Controller Placement Approach For SDWSN Speaker: Arka Mazumdar		
237	DAISS: Design of an Attacker Identification Scheme in CoAP Request/Response Spoofing Speaker: Pinaki Mitra		

Time: 18:15 - 20:15 NZST		Technical Session 4 (TS-04) Chair: Hamid GholamHosseini	
Paper ID	Title & Author		
5	NOVEL ALL-PASS SECTION FOR HIGH-PERFORMANCE SIGNAL PROCESSING USING CMOS DCCII Speaker: Taaha Nizam		
59	Hardware Realization of Solar Powered Capacitor Start Induction Motor Water Pump Fed by Seven Level Inverter with Minimized Switch Count Speaker: T Poompavai		
61	Computer-Aided Retinal Haemorrhage Detection and Super-Resolution in Diabetic Retinopathy Digital Fundus Images Speaker: Amritha Abdul Salam		
87	Design of a 3-State Switching cell Converter using Hybrid Fuzzy PID and H-infinity Controller Speaker: Nivedita Pati		
88	ATPG for Incomplete Testing of SOC Considering Bridging Faults Speaker: Jatindra Kumar Deka		
215	Deep Reinforcement Learning-Based 3D Exploration with a Wall Climbing Robot Speaker: Raju Halder		
119	A Defense Method Against Facial Adversarial Attacks Speaker: Pradip Kumar Das		
128	Stress Detection using CNN Fusion Speaker: V Ramana Murthy Oruganti		
131	Decision Level Fusion for Diagnosing Autism Spectrum Disorder Speaker: V Ramana Murthy Oruganti		
146	A New Neural Network based Model for Detection of COVID-19 from Chest X-ray Images Speaker: Ritocheta Roy		
Break			
233	Behavioural Pattern Analysis of Fishes for Smart Aquaculture: An Object Centric Approach Speaker: Girisha S		

Time: 20:30 - 22:30 NZST		Technical Session 5 (TS-05) Chair: Ho Seok AHN
24	An FPGA-based Middlebox with Remote Dynamically Reconfigurable Application Plane Speaker: Tze Hon Tan	
66	Process Management for Admission Control to Access Available Resources for Delay Sensitive Service in Fog-to-Cloud Architecture Speaker: Uthpala Premarathne	
98	Improving phase-OTDR Signal-To-Noise Ratio to Reduce Ambiguity in Intrusion Detection Speaker: Fairuz Abdullah	
102	Agro-Mate: A Virtual Assister to Maximize Crop Yield in Agriculture Sector Speaker: Dayalini Sribalakumar	
106	Deep Learning-Based Surveillance System for Coconut Disease and Pest Infestation Identification Speaker: Janaka Wijekoon	
109	Convolutional Neural Network or Vision Transformer? Benchmarking Various Machine Learning Models for Distracted Driver Detection Speaker: Chee-Onn Chow	
135	Intelligent Digitalization of the Sinhala Form Templates Speaker: Kevin Gomez	
136	Precise eye center localization in a practical environment Speaker: Naseem Ahmad	
137	Smart Snake Identification System using Video Processing Speaker: Janaka Wijekoon	
147	Graph Eigenvalue based Structural Method towards Phonetic Boundary Detection Speaker: Pradip Kumar Das	
167	Scene Text Recognition with Orientation Rectification via IC-STN Speaker: Veronica Naosekpm	
176	Letting Villages Go Smart in Indian Scenario Speaker: Kaythry P	

Time: 20:30 - 22:30 NZST		Technical Session 6 (TS-06) Chair: Nurul Sarkar
Paper ID	Title & Author	
163	A Bilingual Audio Based Online Shopping Mobile Application for Visually Impaired and the Elderly People Speaker: Varniah Kangeswaran	
205	SMART-EDF: An EDF based semi-partitioned energy-aware multicore scheduler for real-time systems Speaker: Sanjay Moulik	
47	ASSISTING WHEELCHAIR: ASSIST W Speaker: Dilesha Ranaweera	
53	ROS Based Heterogeneous Multiple Robots Control Using High Level User Instructions Speaker: Samantha Rajapaksha	
78	Deep Learning based Real-Time Discovery of False Data Injection Attack in Power Sector Speaker: Debottam Mukherjee	
82	Comparison of Step-Down Charge Pump Converters and Supercapacitor-Assisted Low-Dropout (SCALDO) Regulators Speaker: Kosala Gunawardane	
212	Circuit Protection Techniques for Supercapacitor-Assisted Low-Dropout (SCALDO) Regulator Speaker: Kosala Gunawardane	
142	Impact of Brute Force Based False Data Injection Attack on Distribution System State Estimation Speaker: Poornachandratejasvi Bhattar	
145	Color aware image enhancement algorithm for remote surveillance using low cost cameras in unevenly illuminated environments Speaker: Tharindu Dharmasena	

Day 3, 9th December 2021

Third of the conference consist of 8 technical sessions, two in parallel with total of 84 presentations on the day.

Time (NZST)	DAY 3 (9 December 2021) Tentatively 09:00- 17:00 NSZT	
9am-10:30am	Technical Session 7 (9 presentations)	Technical Session 8 (9 presentations)
10:30-10:45am	Break(15mins)	
10:45am-12:45pm	Technical Session 9 (12 presentations)	Technical Session 10 (12 presentations)
12:45pm-1:15pm	Break (30 mins)	
1:15pm-3:15pm	Technical Session 11 (12 presentations)	Technical Session 12 (12 presentations)
3:15pm-3:30pm	Break (15 mins)	
3:30pm-5pm	Technical Session 13 (9 presentations)	Technical Sessions 14 (9 presentations)

Time: 9:30 - 10:30 NZST	Technical Session 7 (TS-07) Chair: Kean Aw	
Paper ID	Title & Author	
55	Modelling of a 1 T High-Temperature Superconducting Applied Field Module for a Magnetoplasmadynamic Thruster Speaker: Jamal Olatunji	
80	Detecting Changes in Cognitive Load through Audified EEG Speaker: Claire Davies	
101	Synthetic Images Generation Using Conditional Generative Adversarial Network for Skin Cancer Classification Speaker: Ranpreet kaur	
113	Overwhelmed by Fear: Emotion Analysis of COVID-19 Vaccination Tweets Speaker: Sanghyub, John LEE	
201	Performance Comparison of IPv6 in 802.11ac WLAN in Windows and Linux Environment Speaker: Sam Kolahi	
231	Modeling Tidal Streams of the Boqueirão Channel Using Delft3D Speaker: Rafael Veras	
252	Quantification of edge effects in capacitive biopotential sensing Speaker: Anubha Kalra	

Time: 9:30 - 10:30 NZST		Technical Session 8 (TS-08) Chair: Seho Kim	
Paper ID	Title & Author		
17	A Comparison of Electromagnetic Behaviour in Classical and Mutually Coupled Switched Reluctance Generators Speaker: Adam Taylor		
30	Performance of a New 17-Level Asymmetrical Inverter Module Speaker: Adam Taylor		
34	Towards the Development of a Low-Cost Soil Drying Oven Speaker: Praneel Chand		
84	Improved Handshaking Procedures for Transport Layer Security in Software Defined Networks Speaker: Jack Li		
122	Digitisation of Conventional Water Meters using Automated Number Recognition Speaker: Jack Li		
241	Static Characterisation of Gallium Nitride MOSFETs at Cryogenic Temperatures Speaker: Henry Seaton		
243	High Impact Low Probability Weatherization Impact Analysis for Electricity Infrastructure Speaker: Lakshita Lakshita		
247	dShed - Smart Load Shedding Orchestrator for DERM of DERMS Speaker: Abhinav Chopra		

Time: 10:45 - 12:45 NZST		Technical Session 9 (TS-09) Chair: Hamid GholamHosseini	
Paper ID	Title & Author		
50	Modulation Characteristics of Simultaneous Multi-Channel OFDM TV Signal Conversion System Speakers: Tao Guo, Koji Kikushima, Junji Murotani		
54	Considering Methods of Managing Noises Such As Coughs and Footsteps When Measuring Lung Sounds in Real Time Speaker: Tetsunori Suzuki		
56	Comparison of Direct and Localization-based Methods for Position Verification using Distance Measurement Speaker: Junichi Naganawa		
57	A New Memory Consistency Model for Real-Time Multicore Processors		
103	Synthesis of Localized Flooding Disaster Scenes using Machine Learning Approach Speaker: Prarinya Siritanawan		
114	Full Hardware Implementation of FreeRTOS-Based Real-Time Systems Speaker: Yukino Shinohara		
118	A Method of Service Function Chain Configuration to Minimize Computing and Network Resources for VNF Failures Speaker: Akihiko Taniguchi		
150	Development of the human tracking system using the cooperating of multiple cameras arranged sparsely Speaker: Shimada Hirokazu		
162	A Fair Allocation Method of Curtailed Power for Wind Farms Considering Transmission Line Capacity and Conditions for Fair Allocation Speakers: Daichi Sugawara, Hiroumi Saitoh		
177	Phase-based accelerated motion magnification using image pyramid Speaker: Sei-ichiro Kamata		
183	Which one is Kaphrao? Identify Thai Herbs with similar leaf structure using transfer learning of Deep Convolutional Neural Networks Speaker: Prarinya Siritanawan		
185	A Deep Neural Network Technique for Electricity Price Forecasting in Consideration of Spikes Speaker: Hiroyuki Mori		

Time: 10:45 - 12:45 NZST		Technical Session 10 (TS-10) Chair: Nurul Sarkar	
Paper ID	Title & Author		
32	A Study of Total Variation Regularization in Digraph Signal Denoising Speaker: Chien-Cheng Tseng		
33	Node Classification Using Graph Convolutional Network with Dropout Regularization Speaker: Chien-Cheng Tseng		
44	Development of High Performance Hardware by High-Level Synthesis of Median-Based Dynamic Background Subtraction Method with Multiple Line Buffers Speaker: Akira Yamawaki		
49	Omnidirectional Background Scrolling in High-Level Synthesis Oriented Game Programming Library Speaker: Akira Yamawaki		
60	An Improved LZW Algorithm for Large Data Size and Low Bitwidth Per Code Speaker: Jian-Jiun Ding		
81	SNS Topics Comparison on COVID-19 in India, Japan, and Indonesia Speaker: Yukari Shiota		
115	Hyperspectral Image Classification Based on Multi-stage Vision Transformer with Stacked Samples Speaker: Sei-ichiro Kamata		
129	In Situ Indirect Measurement of Nitrate Concentration in Outdoor Tilapia Fishpond Based on Physico-limnological Sensors Speaker: Ryan Vicerra		
154	Verification of spatiotemporal continuous complex event processing rules by a synthesized data set Speaker: Bonghee Hong		
175	Development of Intelligent On-Demand Fish Feeding System with IoT Monitoring Speaker: Ryan Vicerra		
178	Image Deblurring Using Local Gaussian Models Based on Noise and Edge Distribution Estimation Speaker: Jian-Jiun Ding		
238	Artificial Intelligence Applications in Quality Management System: A Bibliometric Study Speaker: Rogelio Ruzcko Tobias		
Time: 13:15 - 15:45 NZST		Technical Session 11 (TS-11) Chair: Anubha Kalra	
Paper ID	Title & Author		
15	Content-Based Fashion Recommender System Using Unsupervised Learning		
35	Detection and Identification of Abaca Diseases using a Convolutional Neural Network CNN Speaker: Lyndon Buenconsejo		
92	NAMData: A Web-application for the Network Analysis of Microbiome Data Speaker: Geoffrey Solano		
93	Feature Subset Selection Using Genetic Algorithm with Aggressive Mutation for Classification Problem		
Break			
160	GMilk: A Framework for Mobile and Web Application for Breast Milk Services in the Philippines Speaker: Annaliza Catacutan-Bangit		
169	NU READY: A Web and Mobile Application Framework for School Emergency Response Speaker: Annaliza Catacutan-Bangit		
186	Science mapping of Social Media Analytics in Health through Artificial Intelligence Speaker: Rogelio Ruzcko Tobias		
188	Preprocessing Image Contouring Optimization of Handwriting Recognition Using Genetic Algorithm Speaker: Ryan Vicerra		
200	Utilization of K-means Clustering and Color Homography for Automatic Color Calibration in Image Processing Speaker: Argel Bandala		
209	Prescriptive Faculty Performance Analysis: A Case at the Onset of Covid-19 Pandemic Speaker: Brenda Benosa		
221	Portable Executable Malware Classifier Using Long Short Term Memory and Sophos-ReversingLabs 20 Million Dataset Speaker: Argel Bandala		

Time: 13:15 - 15:45 NZST	Technical Session 12 (TS-12) Chair: Weihua Li
Paper ID	Title & Author
40	Development of an Abaca Fiber Automated Grading System Using Computer Vision and Deep Convolutional Neural Network Speaker: Jonel Hong
41	Student Risk Assessment: Predicting Undergraduate Student Graduation Probability Using Logistic Regression, SVM, and ANN Speaker: Darvy Ong
73	PIGMENTnet: Chlorophyll-b Prediction of Lactuca Sativa Leaf Under Hybrid Genetic Algorithm and Recurrent Neural Network Speaker: Heinrich Aquino
223	Identification of Suitable FMRP Using Inverse Ant Algorithm for Caraga Region Speaker: Jaymer Jayoma
6	Predictors of Online Academic Self-Concept of Computing Students Speaker: Annaliza Catacutan-Bangit
26	Thermoelectric Generation System with Maximum Power Point Tracking Algorithm Speaker: Gerard Ang
134	Text-Based Gender Classification of Twitter Data using Naive Bayes and SVM Algorithm Speaker: Maria Nikki Quintos
158	Preliminary investigation on the production of alternative fuel using shampoo sachets and polystyrene blend via catalytic pyrolysis Speaker: Joseph Retumban
217	GEOAGRI: A Geospatial Web-Based Decision Support System to Farm-To-Market Road Network Plan Speaker: Edsel Morales

Time: 15:30 - 17:00 NZST	Technical Session 13 (TS-13) Chair: Kevin Wang
Paper ID	Title & Author
4	Detection of Cricketing Activities Using Deep Learning Speaker: Miftaul Mannan
20	Real-Time Traffic Monitoring and Traffic Offense Detection Using YOLOv4 and OpenCV DNN Speaker: Shahnewaz Siddique
108	DWT Based Transformed Domain Feature Extraction Approach for Epileptic Seizure Detection Speaker: Samir Rahman
173	Neural Network Architecture for the Classification of Alzheimer's Disease from Brain MRI Speaker: Riasat Mahbub
180	Exploring Alzheimer's Disease Prediction with XAI in various Neural Network Models
181	Finite Frequency Robust Control for Electro-Hydraulic Servo Actuated Active Suspension System Speaker: Mazid Ishtique Ahmed
213	Autonomous Warehouse Robot Using Deep Q-Learning Speaker: Shahnewaz Siddique
226	Rice Paddy Disease Detection and Disease Affected Area Segmentation Using Convolutional Neural Networks Speaker: Shahnewaz Siddique
229	Multi-Classification based Alzheimer's Disease Detection with Comparative Analysis from Brain MRI Scans using Deep Learning Speaker: Azmain Kabir

Time: 15:30 - 17:00 NZST		Technical Session 14 (TS-14) Chair: Ho Seok	
Paper ID	Title & Author		
19	Investigation of Dielectric Pocket and Work Function Engineering in Triple Material Hetero Gate Stack Oxide Double Gate TFET for Low Power Applications Speaker: Prasanna Sahu		
68	R-Peak Detection from ECG Signals Using Fractal Based Mathematical Morphological Operators Speaker: Deepankar Nankani		
125	On the Estimation of Difficulty in Emotion Regulation using Spoken Dialogue Speaker: Rohan Gupta		
138	DFCatcher: A Deep CNN Model to Identify Deepfake Face Images Speaker: Arpita Dhar		
144	Ventricular Arrhythmia Classification and Interpretation Using Residual Neural Network with Guided Backpropagation Speaker: Deepankar Nankani		
156	Detecting Lung Cancer from Histopathological Images using Convolution Neural Network Speaker: Dewan Ziaul Karim		
Break			
227	Pseudo-CT image synthesis from Ultrasound images for potential use in Brachytherapy treatment planning initial results Speaker: Anila Satheesh B		
234	Anomaly Detection Using Classification CNN Models: A Video Analytic Approach Speaker: Girisha S		

Day 4, 10th December 2021

The final day of TENCON 2021 conference will have two workshops i.e., Future Architecture of the Network (FAN) and Robotic Workshop in parallel with four technical sessions. The day will have total of 41 presentations.

Time (NZST)	Day 4 (10 December 2021) 09:00- 16:30	
9am-10:30am	Future Architecture of the Network (FAN)	Technical session 15
10:30am-10:40am		Break(10mins)
10:40am-12:00pm		Technical session 16
12:00pm-12:15pm	Break (15mins)	
12:15pm-2:15pm	Technical Session 17(12papers)	
2:15pm-2:30pm	Break (15mins)	
2:30pm-4:20pm	Robotics Workshop	Technical Session 18

Time (NZST): Day 4	Conference Closing Plenary
4:20pm-4:40pm	TENCON 2021 Awards
4:40pm-5:00pm	Introduction to TENCON 2022& TENCON 2021 Formal Closing

Time: 9:00 - 10:30 NZST	Technical Session 15 (TS-15) Chair: Patrick Hu
Paper ID	Title & Author
52	Modelling the thermal effects of tumbling on CubeSats equipped with HTS coils Speaker: Thomas Berry
111	Robust State Feedback Control of Electric Heating Furnace Using a New Disturbance Observer Speaker: Mohammad Al-Rawi
121	Adding a Computationally-Tractable Probabilistic Dimension to Meta-Heuristic-Based Microgrid Sizing Speaker: Soheil Mohseni
197	Applying LETOR and Personalization to Search: A Trade Me Practice Speaker: Hang Yu
207	EMI Issues in DC-Microgrids Due to Power Electronic Converters Speaker: Kosala Gunawardane
244	Matauranga Maori in Power Engineering Achieving Sustainability and Zero Carbon futures with countries indigenous knowledge
246	Realizing Price Responsive Space Heating Setpoints using Degree-Days Energy Signature Speaker: Leonie Bule
249	A New Discrete Frequency Control Method for an Improved Soft-Start of Induction Motors Part 1: CLSSR-DFC Development Speaker: David van der Byl
250	A New Discrete Frequency Control Method for an Improved Soft-Start of Induction Motors Part 2: Simulation Studies Speaker: David van der Byl

Time: 10:40 - 12:00 NZST		Technical Session 16 (TS-16) Chair: Seho Kim	
Paper ID	Title & Author		
42	Analysis of a Vehicle Propulsion System Using Continuous Track LIMs on Steel Plates Speaker: Adam Taylor		
74	Geothermal electricity generation from oil and gas fields in New Zealand		
127	Design and Optimization of piezoelectric transducers Speaker: Liu Liu		
148	Concept-to-implementation of New Threshold-based Fall Detection Sensor Speaker: Sarla Kumari		
190	Short-range Inertia Prediction for Power Networks with Penetration of RES Speaker: Peter Makolo		
203	Greenhouse gas emissions from geothermal powerplants in New Zealand: Is Reinjection of gases a solution? Speaker: Anu Choudhary		
245	Resilience based Criticality Analysis for Seismic performance Assessment of Underground Cables Speaker: Ebad Rehman		
251	New Efficient Procurement of Extended Reserves (AUFLS) in New Zealand with high penetration of distributed generation: Systematic Review Speaker: Nasser Usman Faarooqui		

Time: 12:15 - 14:15 NZST		Technical Session 17 (TS-17) Chair: Nguyen Minh	
Paper ID	Title & Author		
12	SalviaNet: A Machine Learning-Based Leaf Signature Profiling and Species Identification of the Endemic Genus Salvia in Central Asia Speaker: Ryan Vicerra		
Break			
43	Improving the Plucking Point Position Estimation in a Classical Guitar Performance using a Novel Video-Based Approach Speaker: Franz de Leon		
72	Speaker Localization in Smartphones using Adaptive Eigenvalue Decomposition with Noise Reduction Speaker: Franz de Leon		
76	A Blockchain-Based Security Scheme for Vehicular Ad Hoc Networks in Smart Cities Speaker: Jack Li		
99	Ambisonics and Sonic Simulation in Virtual Reality Speaker: Yulia Yagunova		
132	Monophonic Audio-Based Automatic Acoustic Guitar Tablature Transcription System with Legato Identification Speaker: Franz de Leon		
139	Estimation and Tonal Analysis of the Angle of Attack in a Classical Guitar Performance Speaker: Franz de Leon		
141	Contextualizing Types of Filipino Collective Support during the #COVID19 Lockdown Speaker: Brenda Benosa		
204	Finite Element Analysis on a Single-storey Geodesic Dome Structure Using Combination of Polite Hollow Blocks and Cold-Formed Steel Speaker: Ria Liza Canlas		
206	A Comparative Finite Element Analysis of a Two-Storey Residential Building Using Concrete Hollow Blocks and Polite Hollow Blocks Speaker: Ria Liza Canlas		
235	Simplified SOC Balancing of an MMC with Embedded Storage in an EV System Speaker: Alaa Omar		

Time: 14:30 - 16:30 NZST		Technical Session 18 (TS-18) Chair: Ramon Zamora	
Paper ID	Title & Author		
51	Mathematically Modelling the Brain Response to Auditory Stimulus Speaker: Eva Ignatious		
58	Non-contact, Rapid and Robust Method to Determine the Optimal EEG Electrode Positions Using Optical Motion Tracking System Speaker: M Souganttika		
75	Image Compression using Approximate Addition Speaker: Douglas Maskell		
85	Lesson Learned and Future Design of IEC 61850 Based Digital Bay in Central Java Substations Speaker: Rendie Ramadhan		
90	Multiple Distributed Generation Allocation in Radial Distribution Networks by Considering Loss Reduction and Curtailment Speaker: Kritthapat Peanviboon		
95	Experimental Observation of Charged Drop Coalescence Under Electric Field Speaker: Wikanda Nantanawut		
96	A Context-Aware POI Recommendation Speaker: Tipajin Thaipisutikul		
155	Teleoperated Food and Medicine Courier Mobile Robot for Infected Diseases Patient Speaker: Indra Adji Sulistijono		
157	Human Point Cloud Data Segmentation based on Normal Vector Estimation using PCA-SVD Approaches for Elderly Activity Daily Living Detection Speaker: Nova Eka Budiyanata		
189	Effect of Different Splitting Criteria on the Performance of Speech Emotion Recognition Speaker: Bagus Tris Atmaja		
193	Technology Review of Electric Motor for Hybrid-Electric Vehicle Speaker: Yogauta Nugraha		

Access to the Sessions

There are several sessions which will be live streamed as following and the link for those sessions will be provided on our website:

- IEEE Region 10 tracks: Industry track, Professional activities track, Women in Engineering track and Young Professional track on 7th December 2021.
- Opening Address, welcome address, and plenary session on 8th December 2021.
- Future Architecture of the Network (FAN) workshop on 10th December 2021.
- Robotics Workshop on 10th December 2021.
- Awards and Closing Ceremony on 10th December.

TENCON 2021 "IEEE & Future of 5G Technology" on 7th December

https://youtu.be/tEPO_Vnmc0

TENCON 2021 "Journey beyond the horizon - Success story of an incredible woman leader" on 7th December

<https://youtu.be/TmNfjPDmu4>

TENCON 2021 "Effective Scientific Writing and Publishing" on 7th December

<https://youtu.be/BIgHJPWHtk>

TENCON 2021 Opening and Plenary Discussion on 8th December

<https://youtu.be/B9niUiNYVUA>

TENCON 2021 Future Architecture of the Network (FAN) Workshop on 10th December

<https://youtu.be/McIU2YEIvqk>

TENCON 2021 Robotic Workshop on 10th December

<https://youtu.be/DCcBHII8V7M>

TENCON 2021 Awards and Closing on 10th December

<https://youtu.be/6Cwn68r38JY>

Detailed of every session, tracks and workshop are given in the program details of this handbook and also on the Whova platform, you can visit the platform [here](#).

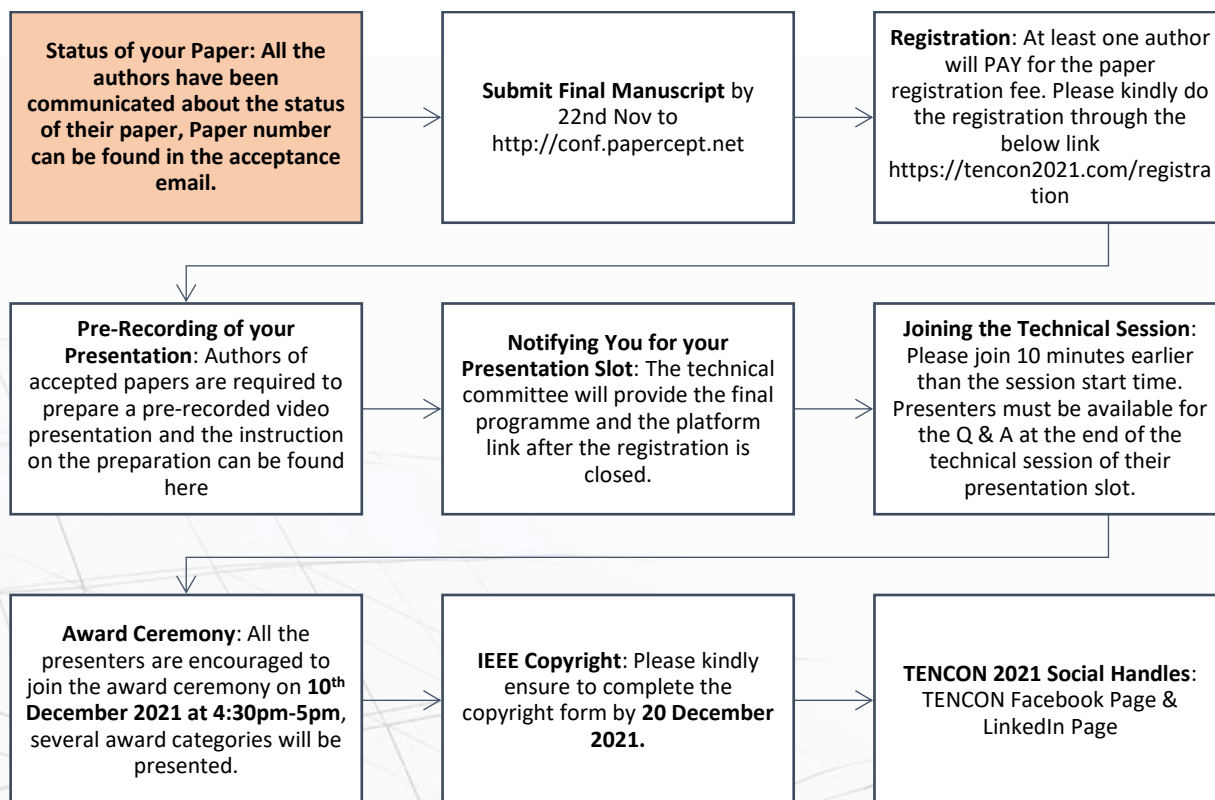


Fig 1. Flowchart for the Author's timeline

1. **Final Manuscript Submission:** Kindly ensure to submit the final manuscript to <http://conf.papercept.net> and the deadline for final submission is 22 November 2021.
 2. **Registration:** The acceptance of your paper is made with the understanding that, at least one author will PAY for the paper registration fee. Please kindly do the registration through the below link <https://tencon2021.com/registration/> as soon as possible. All the authors have been communicated about the status of their paper; paper number can be found in the acceptance notification email.
 3. **Pre-Recording of your Presentation:** Authors of accepted papers are required to prepare a pre-recorded video presentation (8 minutes). The instruction on the preparation of the pre-recorded presentation can be found [here](#).
 4. **Joining the Technical Session:** Please see the tentative program for the conference [here](#), list of the presenters for each technical session will be shared soon. Presenters must be available for the Q & A at the end of the technical session of their presentation slot. Please join 10 minutes earlier than the session start time for identification and preparation. It is a compulsory that presenters need to be present otherwise it will be considered “no show” and thus paper will not be published.
 5. **Award Ceremony:** All the presenters are encouraged to join the award ceremony on **10th December 2021 at 4:30pm-5pm**, several award categories will be presented.
 6. **IEEE Copyright:** Please kindly ensure to complete the IEEE copyright form by **20 December 2021**. The link will be provided by the technical committee as soon as it is available. Your paper will be appeared on IEEE Xplore only after completion of this form.
 7. **Final Conference Program:** Details and list of presenters allocated in different technical sessions will be released soon. The technical committee will provide the final programme and the platform link after the registration is closed.
 8. **TENCON 2021 Social Handles:** Please follow our social handles for more updates on the conference: [TENCON Facebook Page](#) & [LinkedIn Page](#)
- If you have any query related to the conference, please reach out to tencon2021@gmail.com

Abhinav Rakesh Chopra



Office of Helen Clark, Technology Advisor to Rt. Hon. Helen Clark

Abhinav heads (CTO/CISO) the Future and Advanced Technology Security and Architecture portfolio working with Space Systems, Comms Systems, OT and ICS Systems, Cyber Security, Big Data, Blockchain, Distributed Systems, Cloud, ISA99, IoT.

He has helped set standards and provides consulting services to critical infrastructure sectors - ports, telecommunication, transport, energy water, health. He has also worked for council, insurance, healthcare, life sciences, critical infra, public policy, CERTNZ, NCSC and the higher education domain within Europe, the United States, Australia and New Zealand to uplift their security posture.

Abhinav is CISSP, TOGAP, Prince 2, ITIL, Six Sigma certified. He holds advanced degree qualifications in Software, Power Systems, Electronics and Telecommunications Engineering and Business Management.

Xin Liu



Xin Liu (Student Member, IEEE) received the B.E. degree from the Faculty of Electrical Engineering, Silesian University of Technology, Gliwice, Poland, in 2019, and the M.E. degree from the Department of Electrical, Computer, and Software Engineering, the University of Auckland, Auckland, New Zealand, in 2021. He is currently pursuing the PhD degree with the Department of Electrical, Computer, and Software Engineering, University of Auckland, Auckland, New Zealand.

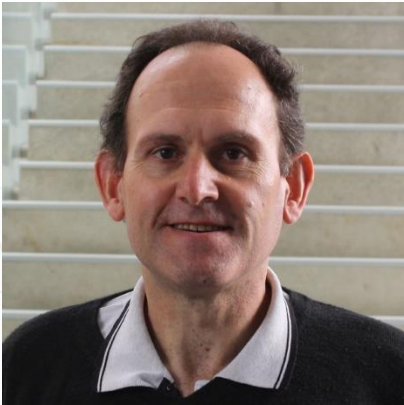
His current research interests include phasor estimation and applications for active distribution networks.

Lakshita



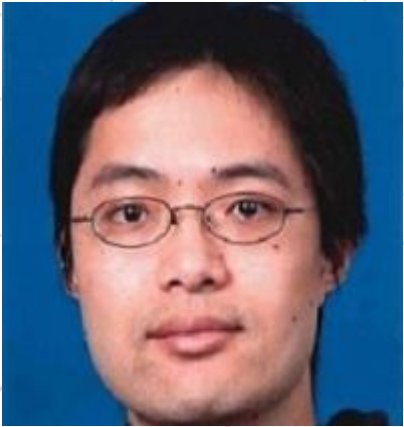
Lakshita is currently a Doctoral candidate in the Electrical, Computer and Software Engineering Department at the University of Auckland, she has worked as a professional teaching fellow, testing engineer, graduate teaching assistant at the department for part time along with the PhD. She has received her Bachelor of Technology (Electrical and Electronics Engineering) from IP University, India in 2014, and Master of Technology (Quality Management) from BITS Pilani, India in 2018. She has worked as a Research Associate at TERI from 2014-2017 based in Delhi, India in the solar lighting laboratory. She also worked a project quality manager at a start-up based in Delhi, India before starting her doctoral program at University of Auckland in 2019. She has been volunteered for IEEE NZ north section since 2019 for several activities and events, she represented NZ activities for IEEE PES Day 2021.

Donald Bailey



Donald Bailey is currently Professor of Imaging Systems at Massey University, and is director of the Centre for Research in Image and Signal Processing. Donald has spent nearly 40 years applying image processing technology to a range of industrial, machine vision and robot vision applications. For the last 20 years one area of particular research focus has been exploring aspects using FPGAs for implementing and accelerating image processing algorithms. He is the author of many publications in this field, including the book “Design for Embedded Image Processing on FPGAs”, published by Wiley / IEEE Press. He is a Senior Member of the IEEE, and is active in the New Zealand Central Section executive.

Kevin I-Kai Wang



Kevin I-Kai Wang received the Bachelor of Engineering (Hons.) degree in Computer Systems Engineering and PhD degree in Electrical and Electronics Engineering from the Department of Electrical and Computer Engineering, the University of Auckland, New Zealand, in 2004 and 2009 respectively. He is currently a Senior Lecturer in the Department of Electrical, Computer, and Software Engineering, the University of Auckland. He worked in industries as a research engineer designing commercial home automation systems and traffic sensing systems from 2009 to 2011. His current research interests include Internet of Things based ambient intelligence, pervasive healthcare systems, human activity recognition, behaviour data analytics and bio-cybernetic

systems.

Ramon Zamora



Lecturer (Assistant Professor), Department of Electrical and Electrical Engineering, School of Engineering, Computer and Mathematical Sciences, Auckland University of Technology, Auckland, New Zealand.

Ramon Zamora received the Ph.D. degree in Electrical Engineering from Washington State University, Pullman, WA, USA, in 2015. He is a Lecturer with the Auckland University of Technology. His research interests include power system modelling, simulation and control, power system management and controls, power electronic application for power systems, grid integration of renewable energy and energy storage, microgrid and smart grid, and

distributed controls.

He served as Technical Co-Chair for IEEE PES ISGT Asia 2017 and is the Technical Co-chair of the 2021 IEEE Region 10 Conference (TENCON).

TENCON 2021 IEEE R10 Track	
14:00 – 14:30	Social Chat/Joining the session
14:30 – 14:35	Welcome Address by IEEE NZ North Peter Over
14:35 – 14:45	Opening: IEEE R10 Director-Elect Lance Fung
Industry Relation Track	
14:45 – 14:48	Introduction by IEEE R10 Industry Relations Committee Chair: Sanjay K. Chowdhary
14:48 – 15:15	Session on 'IEEE & Future of 5G Technology' Ashutosh Dutta
15:15 – 15:23	Q&A
15:23 – 15:25	Vote of thanks
15:25 – 15:30	Break
15:30 – 15:35	Introduction by IEEE R10 Professional Activities Chair: Parkash Lohana
15:35 – 16:15	Panel Discussion: Academia-Industry Engagement (1) Dr. Sudeendra Koushik (India) (2) Prof. Dr. Zubair A. Shaikh (Pakistan) (3) Dr. Paulina Chan (Hong Kong) (4) Dr. Alpha Agape Gopalai (Malaysia) (5) Dr. Jane O'Dwyer, Australia – Industry (Australia)
16:15 – 16:20	Q&A
16:20 – 16:25	Vote of thanks
16:25 – 16:30	Break
WIE Track	
16:30-16:35	Introduction by IEEE R10 IEEE R10 Women in Engineering Committee Chair: Emi Yano
16:35-17:20	Journey beyond the horizon - Success story of an incredible woman leader Dr. Piyapan Hannarkin
17:20-17:25	Vote of thanks
17:25-17:30	Break
YP Track	
17:30 – 17:35	Welcome Address Saaveethya Sivakumar, IEEE Region 10 Young Professionals Committee Chair
17:35 – 17:55	Effective Scientific Writing and Publishing Prof Debatosh Guha, IEEE Fellow and Professor in the Institute of Radio Physics and Electronics at the Rajabazar Science College, University of Calcutta.
17:55 – 18:15	A Systematic Guide on Planning and Writing Grant Proposals Prof. Nowshad Amin at College of Engineering, Universiti Tenaga Nasional, Malaysia.
18:15 – 18:25	Q&A
18:25 – 18:30	Closing

Welcome Address

Peter Over



Peter Over has been with IEEE North Section since 1989, he has held the following the positions in the past: Section Adviser 2020-present, Webmaster 2013-present, Section Chair from 2011-2012, PACE Chair 1995- 2005, IAS Chapter Chair 1989-1994 and supported IEEE activities.

Lance Fung



I was born in Hong Kong and trained/worked as a Marine Radio and Electronic Officer from 1972 to 1978. I graduated with a B.Sc. Degree with First Class Honours in Maritime Studies (1981) and a Master of Engineering Degree in System Test Technology (1982) from the University of Wales. My PhD Degree was awarded by the University of Western Australia in 1994 with a thesis on the Applications of Artificial Intelligent Techniques to Electrical Power System Engineering under the supervision of the late Professor Kit Po Wong. I taught at the Department of Electronics and Communication Engineering, Singapore Polytechnic (1982-1988), and at the School of Electrical and Computer Engineering, Curtin University of Technology (1989-2003). I joined Murdoch University in 2003 and I was appointed as Emeritus Professor in 2015. In 2017, I was awarded an Honorary PhD Degree in Information Technology by Walailak University Thailand, in recognition of my contributions towards the development and advancement of their research and postgraduate programs. I have held positions as Academic Program Chair, Associate Dean of Research, Postgraduate Research Director and Director of the Center for Enterprise Collaborative in Innovative Systems. I have supervised over 30 postgraduate and doctoral students and I have published over 330 academic articles in international journals and conference proceedings in the areas of Neural Networks, Intelligent Systems, Computational Intelligence, Cybernetics, Electrical Power Systems, Image Processing, Data Mining, Machine Learning, Knowledge Management, Education and Web Technology. My contributions can be viewed at MU.research-repository, ieee.Xplore, ResearchGate.net, scholar.google.com, and academic.research.microsoft.com. Since Retirement, I continue dedicate my time to supervise postgraduate students and my motto is “學海無涯” which means “Learning with no boundary”.

I have been a dedicated volunteer in the Institute of Electrical and Electronic Engineering (IEEE) for over two decades. I have served in many positions in the executive committees of Technical Society Chapters, WA Section, Australia Council and R10 Ex-Com. I have been a member of the Board of Governors in the IEEE Systems, Man and Cybernetic Society (2010-2015) served as Chair of the IEEE New Initiative Committee (NIC), Conference Quality Committee (CQC), IEEE Technical Program Integrity Committee (TPIC) and currently as IEEE R10 Chair of Educational Activities Committee (2019-2020). I am honoured to have the support and vote of confidence from IEEE members in the Asia-Pacific Region Region (R10). I shall perform my role as the R10 Director-Elect (2021-2022) and as Director (2023-2024), representing the region on the IEEE Board of Director.

Industry Relations Track

Sanjay Kar Chowdhury



Mr. Sanjay Kar Chowdhury graduated in Electrical Engineering from Jadavpur University in 1987 and thereafter completed Masters in Power System Engineering from IIT Kharagpur. He has been in the business of Electric power transmission & distribution for the last 31 years, working on Electric Power Distribution with CESC Limited. In the last 5 years he has introduced the concept of Asset Management and Regime formulation in CESC.

After 22 years in line function job, Mr. Kar Chowdhury switched to a different role & currently he is looking after Learning & Development, Talent acquisition, Knowledge Management, infrastructure development in HRD Department as Dy. General Manager.

Prior to joining CESC limited in 1990, he had been with DCL, a Calcutta based consultant for one & half year, where he worked on conceptual design of 500 MW coal fired power station.

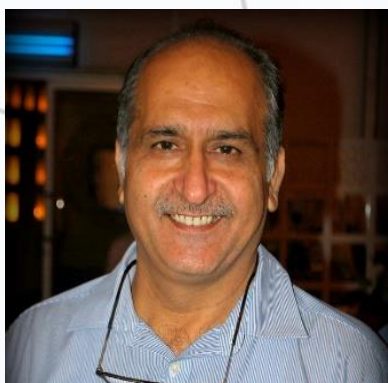
Ashutosh Dutta, Ph.D., IEEE Fellow



Ashutosh Dutta is currently senior scientist and 5G Chief Strategist at the Johns Hopkins University Applied Physics Laboratory (JHU/APL). He is also a JHU/APL Sabbatical Fellow and adjunct faculty at The Johns Hopkins University. Ashutosh also serves as the chair for Electrical and Computer Engineering Department of Engineering for Professional Program at Johns Hopkins University. His career, spanning more than 34 years, includes Director of Technology Security and Lead Member of Technical Staff at AT&T, CTO of Wireless for NIKSUN, Inc., Senior Scientist and Project Manager in Telcordia Research, Director of the Central Research Facility at Columbia University, adjunct faculty at NJIT, and Computer Engineer

with TATA Motors. He has more than 100 conference, journal publications, and standards specifications, three book chapters, and 31 issued patents. Ashutosh is co-author of the book, titled, “Mobility Protocols and Handover Optimization: Design, Evaluation and Application” published by IEEE and John & Wiley.

Parkash Lohana

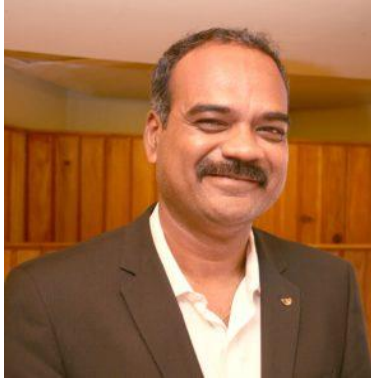


Parkash Lohana (MS., B.E) is an Associate Professor and Head of Computer Science at Usman Institute of Technology Karachi, Sindh-Pakistan. He has more than 29 years extensive experience as an engineer, as faculty, as a head of department, and as a head of academic institution.

Mr. Lohana’s professional interests are Information Systems, Information System Audit, Software Engineering, Human Computer Interaction, Electrical Power Engineering, Engineering & Technology Management, and Engineering IT Education. He has served National Engineering Services Pakistan (NESPAK) as an electrical engineer for about 9 years on different national electrical engineering projects. He was the recipient of an Honorarium from NESPAK for his extra ordinary services in NESPAK and Excellent Performance award

by UIT (Usman Institute of Technology). He is also associated with the following national and international professional organizations: He also served as chair and vice chair of IEEE Karachi Section for about eight years. He served IEEE R10 as a chair R10 HTA Committee for the year 2017-18, and presently he holds the portfolio of Chair IEEE R10 MDA (Membership Development) Committee (2019-20).

Sudeendra Koushik



Dr Sudeendra Koushik has been a passionate and practicing Innovator & technology management professional throughout his career of 26 years, with more than 20 national & international patents. With a PhD in Innovation, Chief Innovator and Co-founder of PRASU, Mr Koushik advises major companies such as Bosch, Continental, General Motors, Mercedes Benz, Volvo etc. on Innovation strategy, Integrated Innovation talent management for Innovation culture, scaling business relevant Innovation, Innovation planning and Execution, developing Innovators & Intrapreneurs and developing Intellectual property. Koushik is also a well-known keynote speaker and TEDX speaker. Dr Koushik has Bachelor of Engineering and MBA in Marketing,

Post-graduation in Strategy, certified Independent director, Senior member IEEE and a researcher with PhD in Innovation.

He is also board member and Vice-President IEEE Technology and Engineering Management Society and Chairman IEEE TEMS India.

Prof. Dr. Zubair A. Shaikh:



He has a recognized and innovative professional with over 20 years of experience as a Senior Administrator, Academician, Researcher, and IT / IS consultant for large scale complex business problems, particularly related to E-Governance, Educational Planning, IT and Technical & Vocational Education. He has a Ph.D., MS in Computer Sc., from New York, USA) & B.Eng. in Computer Systems Engineering with over 15 years of experience as an IT consultant for Wall Street and other National & International organizations. Design, planning and management of IT institutions, and offshore software development organizations. R&D expertise in the areas of Ubiquitous Computing, Multimedia & Graphics, Knowledge Management, Mobile

& Adhoc Networks, and E-Health, E-Education and Learning and Teaching theories. He has been into university level academic position for last 20 years at various Professorial ranks in Computer Science and Management and into academic leadership position for last 15 years.

Dr Paulina Chan



Dr Paulina Chan received PhD, DIC in EEE specialising in Communications at Imperial College London, MSc (Business) at Birkbeck College, University of London, and PhD (honoris causa) International Open University - WHO/UNICEF Alma-Alta Declaration Paulina is the Chair of IEEE Hong Kong Section (9500 professional members 2020) and Chair of the Hong Kong Regional Board, Chartered Management Institute (10,000 CMgr worldwide).

As the Principal and CEO of Global Mutual Innovation Consortium, an international think-tank on multinational technology business, Paulina works with trans-disciplinary professionals across

continents to foster collaborations and development in innovative technologies, intelligent infrastructures, and green energies. Her career includes Managing Directors and expatriates of AT&T/Lucent Technologies in the US, Asia/Pacific Region, and the EU; Project Director of Exxon/Mobil Corporation Headquarters, New York NY; China Regional General Manager and expatriate of ICO Global Communications London and Beijing; and Senior Adviser of the EU for Hungary. Dr Chan is former Imperial College Ambassador (Hon). She is also the Founding & incumbent Champion of the Imperial College Mentoring Programme to guide young scientists / technologists / engineers / managers-in-training to develop career paths and personal growth. She is Life Member of Universal Energy Alliance (US, EU, AP). Paulina was Guest at the Nobel Prize Award Ceremony (2009) in honour of Sir Charles Kao.

Dr. Alpha Agape Gopalai



Alpha Agape is a Senior Lecturer and the Course Coordinator of the Mechatronics Discipline in the School of Engineering in School of Engineering, Monash University Malaysia. He received a Doctor of Philosophy in Engineering Science (Biomedical Engineering) from Monash University in 2012, Degree in Mechatronics, Monash University, 2007. His research interests are in instrumentation and the design of intelligent/ autonomous systems particularly for the use of clinical/ sports biomechanics for early detection of physical injuries affecting posture and gait, both of which are key ingredients for acts of daily living. He has been successful in obtaining several external research grants to fund his research interests/area, from government agencies

and industries.

Alpha also serves in various leadership capacities within IEEE Malaysia Section. He is currently the Student Activities Chair for IEEE Malaysia Section and the Chair of IEEE Engineering in Medicine & Biology Society, Malaysia Chapter.

Dr. Jane O'Dwyer



Jane O'Dwyer, currently Vice-President (Engagement and Global Relations) at The Australian National University will become the Chief Executive Officer of the Cooperative Research Centres Association (CRC Association) in January 2021. Jane joins the CRC Association after a more than 25-year career that has spanned Australia, Japan and the United States. Commencing her career as a political advisor, Jane held key roles in the Australian Local Government Association and Sports Medicine Australia. She joined ANU more than 15 years ago after 4 years in Japan and has been a close and trusted advisor to three consecutive ANU Vice-Chancellors across media and public affairs, policy, international relations and global engagement. She

spent three years in the United States, where she established the ANU North America Liaison Office attached to the Australian Embassy in Washington DC. Ms O'Dwyer holds a Bachelor of Arts (Curtin), master's degrees in management (ANU) and Journalism (Wollongong) and is a Graduate of the Australian Institute of Company Directors. She is Deputy Chair of the Canberra Writer's Festival and a Director of the Canberra Convention Bureau.

Women In Engineering Track

Emi Yano: IEEE Region 10 Women in Engineering Committee Chair 2019-2022



Emi Yano graduated from the Graduate School of Science and Engineering at Chuo University, Tokyo, Japan. She specialized in Kansei Engineering (Affective Engineering); human friendly information processing technologies for suiting diversity of user's cognitive and behavioural responses. Before assuming her current position, she worked in an information integration company as a Web Usability Engineer and has accumulated several years' experience in web consulting using the Human-Centered Design and Design Thinking process. In 2009, she moved to Ricoh IT Solutions. Currently, she is focusing on personal training for engineers and improving communication between people in the workplace through effective leadership and organizational development in the HR department. She also has been a very active volunteer leader in IEEE since 2008. She was the Chair 2016-2017 of IEEE Japan Council Women in Engineering and she is currently the Chair of Region 10 (Asia-Pacific) Women in Engineering Committee. Through IEEE WIE activities, she connects people and bring them a big smile!

Dr. Piyapan Hannarkin, MD of Operational Energy Group Ltd, Chair of IEEE Women in Power Thailand, Vice Chair, IEEE PES Thailand



Dr. Piyapan Hannarkin received the Bachelor of Engineering Degree in Electrical Engineering (Power) from Chiang Mai University and Master Degree in Public Administration from Suan Sunandha Rajabhat University. She also received her first PhD in Electrical Engineering from Chiang Mai University and another PhD in Development Administration from Suan Sunandha Rajabhat University.

Currently, Dr. Piyapan is working as the Managing Director of Operational Energy Group Limited (OEG). She had also held many executive positions in the Industrial Sector such as Vice President of H-Power Company Limited and Manager of Business and Planning in Polyethylene Company Limited. Prior to the Executive Administration, she had worked as an Electrical Engineer in Provincial Electricity Authority and National Petrochemical Public Company Limited for 10 years.

Not only has Dr, Piyapan "Kai" Hannarkin carved out a successful career in the male-dominated arena of Electrical Engineering, but also she has raised two daughters singlehandedly which anyone would be proud of.

Moreover, she has also dedicated her time for the public community through her tremendous contribution towards the Power and Energy related National Committee. She is also a public figure who strives to inspire women in the area of Power and Energy.

Presently, Dr. Piyapan is the Chair of IEEE Women in Power Thailand Chapter and also the Vice Chair of IEEE Power and Energy Society, Thailand Chapter. She is also leading the Thai Women Engineer Association by holding the position of Vice President.

Young Professional Track



IEEE TENCON 2021

Young Professionals Track

Speakers



Prof Debatosh Guha

IEEE Fellow

Professor, University of Calcutta

Effective Scientific Writing and Publishing



Prof. Nowshad Amin

Professor, Universiti Tenaga Nasional, Malaysia.

A Systematic Guide on Planning and Writing Grant Proposals



Saaveethya Sivakumar

Chair, IEEE Region 10 Young Professionals

Welcome Address & Closing



7th December, 2021



17.30 – 18.30 (UTC + 12)

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Saaveethya Sivakumar



She is currently a lecturer at Curtin University Malaysia. She received her Doctoral Degree from Monash University in 2020 and Bachelor of Engineering in Electronic and Communication Engineering. She has a firm interest in STEM-related interactive teaching and learning. Her research focus lies in the areas of Machine learning, Signal Processing, Image Processing in the field of Biomedical Engineering. She is also actively involved in various leadership roles for the past 9 years as a member of the Institute of Electrical and Electronics Engineers (IEEE). Currently, she is appointed as the IEEE Region 10 (Asia Pacific) Young Professionals Committee Chair and as a member at IEEE MGA Student Activities Committee.

Prof. Nowshad Amin, College of Engineering, Universiti Tenaga Nasional, Malaysia.



Nowshad Amin (S'1999_M'2007_SM'2019) is the head of Solar Energy Research Unit at the Institute of Sustainable Energy of Universiti Tenaga Nasional (@ UNITEN), Malaysia. After higher-secondary-education from his native country Bangladesh, he received Japanese Ministry of Education (MONBUSHO) scholarship in 1990 to study Electrical Engineering, where he achieved BSc (1996) from Toyohashi University of Technology, followed by Masters (1998) and PhD (2001) from Tokyo Institute of Technology, Japan. His areas of expertise include Renewable Energy, especially Solar Photovoltaic Cells' Fabrication and Application. He is a distinguished lecturer of IEEE's Electron Devices Society (EDS). Apart from teaching over 17 years, he has been leading many government (Malaysia) and international (NSF-USA, Qatar Foundation) funded projects. He is actively involved in promoting Solar Energy in South and South-East Asian countries.

Debatosh Guha



Debatosh Guha is a Professor in Radio Physics and Electronics, University of Calcutta. He is the former HAL Chair Professor of IIT Khargapur and former Head of the Institute of Radio Physics and Electronics of the University of Calcutta. He received the B. Tech. and M. Tech. degrees in Radio Physics and Electronics and Ph. D. in microwave engineering from the University of Calcutta in 1987, 1989, and 1994 respectively. He has extensively researched on improving the printed and dielectric resonator antenna techniques for the new generation radar and airborne applications. In recognition of his technical contributions Prof. Guha has been elected Fellow of IEEE, Fellow of the Indian National Academy of Engineering (INAE), and also of the National Academy of Sciences, India (NASI). He is a recipient of several national and international awards which include IETE highest honour Ram Lal Wadhwa Award (New Delhi 2016), IEEE RMTG Award (Chicago 2012), URSI Young Scientist Award (Lille, France 1996), and Jawaharlal Nehru Memorial Fund Prize (New Delhi 1984). He has been serving different national and international committees in different capacities.

Opening Address, Welcome Address (Chair), Plenary Speech	
14:25-14:30	Waita-Te Aroha by MC Lakshita
14:30 – 14:45	Welcome Address by General Chair Nirmal Nair
14:45 – 15:05	Address by IEEE Region 10 Director Deepak Mathur
15:05 – 15:15	TENCON 2021 Facts and Figures Tek Tjing Lie
15:15 – 15:45	Plenary Discussion Moderated by Kate Murphy
15:45 – 15:55	Plenary Q&A
15:55- 16:00	Vote of thanks By Abhinav Chopra

Nirmal Nair



Nirmal received his BE in Electrical Engineering from Maharaja Sayajirao University (M.S.U), Baroda, India. He completed his ME in Electrical Engineering with specialization in High Voltage Engineering from Indian Institute of Science (IISc), Bangalore, India. After a decade of professional engineering and lecturing in India he moved to United States where he completed his PhD in Electrical Engineering at Texas A&M University. During this period, he also taught undergraduate papers in Computer Architecture and Foundation Course in Electrical Engineering. Thereafter in late 2004 he decided to move to New Zealand.

He has held several professional, teaching and research positions in India, USA and now in New Zealand. Presently, he is an Associate Professor at Department of Electrical & Computer Engineering of University of Auckland. His expertise involves smart grids, power system analysis, protective relaying & optimization in the context of electricity markets and integration of DG/renewable sources into electricity networks. He serves in various capacities for IEEE New Zealand North Section, IEEE Power and Energy Society and is Secretary for CIGRE New Zealand National Committee. He is actively engaged towards University of Auckland's outreach with power system stakeholders, internationally and in New Zealand across all sectors (generators, distributors, retailers, metering, transmission system operator, regulatory bodies, consultancies, vendors, Electricity Engineering Association etc).

His research interests span power systems in the context of protective relaying, electricity markets, voltage security, blackouts and resilience. His current focus is towards integration of distributed/renewable energy sources to electricity system with emphasis on protection (IEC 61850, SPS, WAPS), electricity markets (block-chain), innovations (Micro-grid, Storage, EV & PV integration, cyber-resilience, digital twins, machine learning and AI), low-carbon transitions and energy policy.

Deepak Mathur



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

He has also served in many leadership roles in IEEE at Section, Council, Region and MGA (Member Geographic Activities). Deepak was IEEE India Council Chair in 2015-16.

Deepak, former Chief General Manager of ONGC (India’s premier public sector company engaged in exploration and exploitation of hydrocarbons), has more than 35-years of professional experience in fields of electronics, telecommunication, IT infrastructure and has held various engineering and managerial positions. He has successfully done planning and executions of several IT projects like SCADA, on-line/real-time monitoring systems, IT Infrastructure creation, Wi-Max based broadband wireless access system, GPS/GSM based vehicle tracking system etc. and has led teams of IT professionals and multi-disciplinary teams. He has also experience of managing and working on Hi-Tech (Oil) Well Logging Systems which is to analyse the properties of subsurface to explore the possibility of hydrocarbons.

Deepak has Bachelor of Engineering degree in Electronics and Communications from IIT, Roorkee and an MBA. 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.

Deepak is also member of IEEE-HKN or Eta Kappa Nu (HKN), which is the international honor society of the IEEE. "The organization promotes excellence in the profession and in education through an emphasis on scholarship, character, and attitude." Membership is a lifelong designation for individuals who have distinguished themselves as students or as professionals in electrical engineering, computer engineering, computer science, and other fields of IEEE interest.

Tek Tjing Lie



Professor Tek Tjing Lie is the Deputy Head of School at the Auckland University of Technology (AUT) School of Engineering, Computer and Mathematical Sciences. He received his BS degree from the Oklahoma State University, MS and PhD degrees from Michigan State University. He has previously held academic positions in the School of Electrical and Electronic Engineering at the Nanyang Technological University. His research interests are in the fields of Power System Operation and Control, Deregulated Electrical Power Markets, AI Application to Power Systems, Renewable Energy and Smart Grids.

Kate Murphy



She is currently an Outage and Operational Planning Manager at Vector ltd based in Auckland. She is an experienced technology engineer with a demonstrated history of working in the utilities industry. She has strong engineering professional with a Master of Energy, focused on Power Systems and Renewable Energy from University of Auckland.

There is a growing industry concern with the introduction of Information 4.0 and Society 5.0 innovations that cybersecurity threats will increase in Operational Technology environments. With COVID-19 cybersecurity threats likelihood increased, and its impact materialised.

We are bringing cybersecurity expertise from our critical infrastructure and operational technology environments to work through how they have been conquering these hazards, their strategy moving forward and practices they propose, and the benefits are realizing.

Bhojraj Parmar



Bhojraj is a seasoned Cyber Security Professional. He is currently the Head of Mandiant Consulting - New Zealand and acts as a vCISO to a number of companies. He has worked in various geographies, around the globe and brings his specialized expertise to New Zealand. Mandiant has exposed a number of state actors and hackers. Bhojraj takes this further and has been providing advice and action for a number of critical service companies in New Zealand including water, power, telecom and other businesses.

Abhinav Chopra



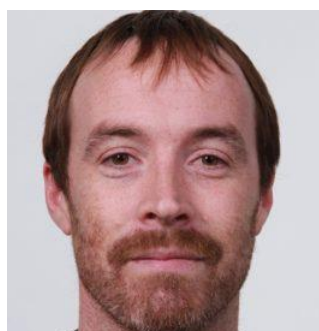
Abhinav Chopra heads (CTO/CISO) the Future and Advanced Technology Security and Architecture portfolio working with Cyber Security, Big Data, AI, Blockchain, Distributed Systems, Cloud, ISA99, IoT.

He has helped set standards and provides consulting services to critical infrastructure sectors - ports, telecommunication, transport, energy, water, health. He has also worked for council, insurance, healthcare, life sciences, critical infra, public policy, CERTNZ, NCSC and the higher education domain within Europe, the United States, Australia and New

Zealand to uplift their security posture. Abhinav is CISSP, TOGAF, Prince 2, ITIL, Six Sigma certified. He holds advanced degree qualifications in Software, Power Systems, Electronics and Telecommunications Engineering and Business Management.

He is the Cyber Security Advisor to the Rt. Hon. Helen Clark, and is an active member of AEA, IEEE, ISO, ITPNZ, Engineering New Zealand, and Institution of Engineers India.

Peter Jackson



Peter Jackson Is a seasoned ICS security professional, providing expert advice and consulting services via SGS ECL. He is a vCISO to several critical infrastructure companies. He is experienced an IACS Cyber Security professional. He leads the ECL Cyber team of industrial cyber specialists in supporting the industrial sector in NZ.

His background includes control and safety systems experience as a TÜV certified Functional Safety Engineer. I am certified as a SANS Global Industrial Cyber Security Professional (GICSP); GIAC Response & Industrial Defence (GRID); GIAC Cyber Threat Intelligence (GCTI).

He is also a SANS instructor for SANS ICS515 (ICS Active Defence and Incident Response). I've spoken at many conferences, nationally and internationally. I am a member of ISA-99 (responsible for 62443 suite)

Future Architecture of the Network – TENCON 2021 Workshop Programme 10 December 2021	
9:00 – 9:05	TENCON Welcome Nirmal Nair
9:05 – 9:10	FAN Introduction Prof. Neville Watson Presentation WS1 Prof. Aniruddha Gole Presentation WS2 Prof. Frede Blaabjerg Presentation WS3 A/Prof. Ioannis Lestas Presentation WS4 Dr. Dan Martin
9:10 – 9:30	
9:30 – 9:50	
9:50 – 10:10	
10:10 – 10:30	
10:30 – 10:40	Break
10:40 – 11:05	Panel session opening pitches moderated by Andrew Lapthorn Babak Badrzadeh (Aurecon, Australia) Ram Adapa (EPRI, USA) Bernd Wunder (Germany) Hamish Laird (ELMG Digital Power, New Zealand) Tipene Merritt (New Zealand)
11:05 – 11:35	Open panel discussion
11:35 – 11:45	Moderator closing
11:45 – 11:50	Vote of Thanks

Neville Watson



Neville R. Watson (SM'99) received the B.E. (Hons.) and Ph.D. degrees in electrical engineering from the University of Canterbury, Canterbury, New Zealand. He is currently a Professor with the University of Canterbury. His interests include power quality and steady-state and dynamic analysis of ac/dc power systems.

Neville was appointed to the academic staff at the University of Canterbury in September 1987 where he has been teaching and performing research into various aspects of power systems and power electronics. Neville's main areas have been Computer Modelling of Electrical power systems, HVDC, power quality, harmonics, and electromagnetic transients. Neville has been very active in

professional societies and is a member of CIGRE AP C4 committee on Technical Performance, joint Australia/New Zealand standards committee EL034 on Power Quality. In the past Neville has been a contributing member of various other standards & IEEE committees. He has over the years also

helped industry to solve issues by undertaking various consultancy jobs (under the auspices of Canterprise and later EPECentre when established). He has been the PI on the FRST/MSI Power Quality project. Neville is a senior member of IEEE, member of IPENZ and IET (UK). He is also a Chartered Professional Engineer, CPEng (NZ), on the International Professional Engineers register, Int.PE(NZ), and a Practice Area Assessor for IPENZ.

Professor Aniruddha Gole, University of Manitoba



Prof. Ani Gole is Distinguished Professor and NSERC Industrial Chair in Power Systems Simulation at the Department of Electrical and Computer Engineering, at the University of Manitoba. He has over 30 years' experience in the development of modelling tools for power networks incorporating power-electronic equipment such as HVDC and FACTS converters. He is one of the original developers of the widely used PSCAD/ EMTDC simulation program, and has made important contributions to the development of the world's first real-time digital simulator for power systems - RTDS from RTDS Technologies of Winnipeg, Canada.

Dr. Gole is a Professional Engineer in the Province of Manitoba, a Fellow of the Canadian Academy of Engineering (CAE) and a Fellow of the Institute of Electrical and Electronic Engineers (IEEE). For his contributions to the modelling of Flexible Ac Transmission System (FACTS) devices, he received the IEEE Nari Hingorani FACTS medal in 2007.

Professor Frede Blaabjerg, Aalborg University



Frede Blaabjerg (S'86-M'88-SM'97-F'03) was with ABB-Scandia, Randers, Denmark, from 1987 to 1988. From 1988 to 1992, he got the PhD degree in Electrical Engineering at Aalborg University in 1995. He became an Assistant Professor in 1992, an Associate Professor in 1996, and a Full Professor of power electronics and drives in 1998. From 2017 he became a Villum Investigator. He is honoris causa at University Politehnica Timisoara (UPT), Romania and Tallinn Technical University (TTU) in Estonia.

His current research interests include power electronics and its applications such as in wind turbines, PV systems, reliability, harmonics and adjustable speed drives. He has published more than

600 journal papers in the fields of power electronics and its applications. He is the co-author of four monographs and editor of ten books in power electronics and its applications.

He has received 33 IEEE Prize Paper Awards, the IEEE PELS Distinguished Service Award in 2009, the EPE-PEMC Council Award in 2010, the IEEE William E. Newell Power Electronics Award 2014, the Villum Kann Rasmussen Research Award 2014, the Global Energy Prize in 2019 and the 2020 IEEE Edison Medal. He was the Editor-in-Chief of the IEEE TRANSACTIONS ON POWER ELECTRONICS from 2006 to 2012. He has been Distinguished Lecturer for the IEEE Power Electronics Society from 2005 to 2007 and for the IEEE Industry Applications Society from 2010 to 2011 as well as 2017 to 2018. In 2019-2020 he served as a President of IEEE Power Electronics Society. He has been Vice-President of the Danish Academy of Technical Sciences.

He is nominated in 2014-2020 by Thomson Reuters to be between the most 250 cited researchers in Engineering in the world.

Associate Prof. Ioannis Lestas, University of Cambridge



Ioannis Lestas is an Associate Professor at the Department of Engineering, University of Cambridge. He received the B.A. (Starred First) and M.Eng. (Distinction) degrees in Electrical Engineering and Information Sciences and the Ph.D. in control engineering from the University of Cambridge (Trinity College). His doctoral work was performed as a Gates Scholar. He has been a Junior Research Fellow of Clare College, Cambridge and has been awarded a five-year Royal Academy of Engineering research fellowship. He is also the recipient of a five-year ERC starting grant. He is currently serving as Associate Editor for the IEEE Transactions on Smart Grid and the IEEE Transactions on Control of Network Systems. His research interests are in the area of control of power networks and smart grids.

Dr Ram Adapa - EPRI



Dr. Ram Adapa is a Technical Executive in the Power Delivery and Utilization Sector at EPRI. His research activities focus on High Voltage Direct Current (HVDC) transmission, Flexible AC Transmission Systems (FACTS), Custom Power, and Fault Current Limiters.

Dr. Adapa joined EPRI in 1989 as a Project Manager in the Power System Planning and Operations program. Later he became Product Line Leader for Transmission, Substations, and Grid Operations where he developed the research portfolio and business execution plans for the Grid Operations and Planning areas. Some of the tools in this portfolio included market restructuring, transmission pricing, ancillary services, and security tools to maintain the reliability of the grid.

Before joining EPRI, Dr. Adapa worked at McGraw-Edison Power Systems (presently known as Eaton's Cooper Power Systems) as a Staff Engineer in the Systems Engineering Department.

Dr. Adapa received a BS degree in electrical engineering from Jawaharlal Nehru Technological University, India, an MS degree in electrical engineering from the Indian Institute of Technology, Kanpur, India, and a PhD in electrical engineering from the University of Waterloo, Ontario, Canada.

Dr. Adapa is an IEEE Fellow and has been honored several times by IEEE for his outstanding contributions to the profession. He received the 2016 IEEE PES Nari Hingorani Custom Power Award. He has authored or coauthored more than 125 technical papers and is an IEEE Distinguished Lecturer. He is an individual member of CIGRE and a Registered Professional Engineer.

Dr Hamish Laird – ELMG Digital Power



Dr. Hamish Laird is CTO at ELMG Digital Power where he works on the digital control and design of power converters. He has thirty years of experience working with power conversion and energy systems in New Zealand, Australia, UK, USA, Switzerland, Sweden, Italy. He is a senior member of the IEEE and is a member of the Industrial Electronics Societies (IES) Technical Committee (TC) for Programmable Devices in Industrial Applications. Hamish is also an Adjunct Senior Fellow at the Electrical and Computer Engineering Department, University of Canterbury where he contributes to power electronics research.

In a globe spanning career in power electronics Dr Laird has worked on a wide variety of converter applications including HVDC, SVC, high voltage UPS, electric vehicles, industrial motor drives, railway power converters, naval drive trains, multilevel converters for power systems, solar and grid connected energy storage. Hamish lives in Christchurch, New Zealand.

Dr Dan Martin – ETEL Transformers



Daniel Martin is a chartered professional engineer with 20 years of experience in transformers and electrical systems. He is currently the convener of the CIGRE New Zealand panel for power transformers and reactors. He is also a senior member of the IEEE and a chartered member of Engineering New Zealand. In his current role of innovation project engineer at ETEL transformers, he leads, manages and completes innovation projects for new technologies. He has a Ph.D. degree in electrical engineering from the University of Manchester and a B.Eng. degree with honours in Electrical and Electronic Engineering from the University of Brighton, UK. Before joining ETEL transformers he was a lecturer at the University of Queensland, with his research interest being on transformer technology, and prior to that the director of the transformers research centre at Monash University.

Andrew Laphorn



Andrew Laphorn (Senior Member, IEEE) received the B.E. (Hons.) and Ph.D. degrees in electrical engineering from the University of Canterbury, Christchurch, New Zealand, in 2008 and 2012, respectively. He is currently a Senior Lecturer in electric machines with the Department of Electrical and Computer Engineering, University of Canterbury, where he also manages the High Voltage Laboratory. His current research interests include rotating electric machines and transformer design and modelling, high-voltage insulation systems, and renewable energy systems. He is a member of Engineering New Zealand and the Electricity Engineers' Association, New Zealand.

Babak Badrzadeh | Technical Director – Power Systems, Aurecon



Babak holds BSc, MSc and PhD all in the area of electrical power systems. Prior to joining Aurecon in March 2021, he spent his career at Mott MacDonald Transmission and Distribution (UK), Vestas Wind Systems (Denmark), and the past nine years with AEMO as the Manager of Operational Analysis and Engineering team.

Babak is a recognised worldwide expert in the areas of power system modelling and analysis, impacts of grid-connected and distributed inverter-based resources from operational, connections and planning perspectives, and power system restoration.

Babak is currently the Convener of CIGRE Working Groups B4.83, C2.26 and C4.56, a member of CIGRE SC C2 Strategic Advisory Committee, and until February 2021 long-time Convener of Australian Power System Modelling Reference Group (PSMRG).

Babak has written more than 70 CIGRE and IEEE journal and conference papers and served as keynote and invited speaker in several international events. In January 2021 Babak was appointed as a Distinguished Lecturer by IEEE Power and Energy Society (PES).

He is also a recipient of 2019 ESIG Engineering excellence award. In March 2021 Babak was appointed as the chief editor of CIGRE Green Book on ‘Power system dynamic modelling and analysis in evolving networks’. In September 2021, he was appointed as an Adjunct Professor by Monash University.

Tipene Merritt



mātauranga Māori.

Tipene Merritt has extensive experience in research and development, including commercialisation, both in New Zealand and Australia. He is an expert advisor for Vision Mātauranga and the development of mutually beneficial relationships between Research Institutions and Māori communities. He has played a leading role in drafting University policy in providing for mātauranga Māori (indigenous knowledge) and taonga species (indigenous flor and fauna). His research (LLM 1st Class Honours) includes an analysis of University IP Policy and how it provides for mātauranga Māori. Merritt’s current research (PhD) seeks to improve outcomes for

TENCON 2021 Robotics Workshop	
14:30 - 14:35	Robotics Workshop Opening Ho Seok Ahn
14:35 - 15:35	Finalists (Shortlisted) Video Presentation
15:35 - 15:40	Feedback from the international judge Arslan Kiyani
15:40 - 15:45	Reflection from Judging Chair Dulsha Kularatna-Abeywardana
15:45 - 15:55	Closing Remarks Zia Ahmed
15:55 - 16:00	Vote of Thanks Nirmal Nair

Ho Seok Ahn



Ho Seok Ahn has been a lecturer with the robotics research group and CARES group in the Department of Electrical and Computer Engineering since 2015. He received his BS degree in Information and Communication Engineering from Sungkyunkwan University, Republic of Korea, and his PhD degree in Electrical Engineering and Computer Science from Seoul National University, Republic of Korea in 2005 and 2010, respectively. He was a researcher at Samsung Software Membership, Samsung Electronics Co., Republic of Korea, from 2001 to 2008. He was a visiting researcher at the Intelligent Systems Research Institute at Advanced Industrial Science and Technology (AIST), Japan, in 2006, funded by JSPS and NRF. He was a senior researcher at Korea Institute of Industrial Technology (KITECH), Republic of Korea, from 2010 to 2012. He was a lecturer at University of Science & Technology (UST), Republic of Korea, from 2011 to 2012. He was a research scientist at Intelligent Robotics and Communication Laboratories, Department of Ambient Intelligence, Advanced Telecommunications Research Institute International (ATR), Japan, from 2012 to 2013. He was a postdoctoral fellow with the Robotics Research Group in the Department of Electrical and Computer Engineering from 2013 to 2015. His research interests include social robots, cultural robots, facial robots, artificial emotional systems, Human-Robot Interaction, healthcare robots, android robots, humanoid robots, intelligent service robots, and modular robot systems. He has two books, and published over 100 research papers, three book chapters, 18 patents, and 21 technical reports. He has received 12 best paper awards, one best research award and 29 awards from robotics competitions, such as intelligent robot competitions and FIRA Robot Soccer Championships.

Dulsha Kularatna-Abeywardana



Dulsha is currently a lecturer at the University of Auckland with Electrical, Software and Computer Engineering Department. She has completed her bachelor's degree in electrical and Electronic Engineering with first class honours in 2005 from the University of Auckland. She then moved on to work at Motorola (former Symbol Technologies), London Stock Exchange Group (former MilleniumIT), Dialog-UoM Mobile Communication Research Lab and finally as a lecturer at the University of Sri Jayawardenepura. She completed her Master of Engineering with Honours, under the guidance and supervision of Professor Patrick Hu. She later continued to PhD under Professor Hu. During her PhD she developed a wirelessly powered bi-stable microfluidic actuator based on electropermanent magnets and

completed PhD in late 2017. She joined the ECSE department as a Professional Teaching Fellow until the end of 2019, from which she moved on to her current role.

She has always looking for new research opportunities and collaborations, to extend creativity and knowledge. As a female engineer, she has been working with students where females are a minority. Through role modelling, encouragement and confidence building female students are more likely to follow careers in STEAM fields. Through her roles at the university and the IEEE Women in Engineering society she extends her knowledge and services to encourage females to reach their full potential in the engineering profession.

Arslan Kiyani



Arslan an accomplished IT & ENGINEERING PROFESSIONAL with a strong passion for technology, high quality customer services, and motivation to contribute to innovative, industry-leading projects. A team player who inspires, coaches, develops, and leads from the trenches and by example as well as strongly motivated to analyse highly technical challenges from multiple perspectives and explore pragmatic solutions quickly and perceptively. He is currently a Senior Analyst at DELL Technologies and IEEE Student Activities Chair (SAC) - IEEE NSW Section since 2017.

He has been highly committed to expanding the professional and technical knowledge of leading-edge developments in the industry through participation in professional organizations, networking events, and educational workshops.

Zia Ahmed



He has been with IEEE Region 10 EXCOM for ten years, interacted with members from all over R10, learn immensely about the region and core issues of importance to members and observe R10 operation closely. In R10 our needs are diverse, but the goals are same i.e., to make IEEE membership professionally and personally beneficial. It is therefore important that we focus on meaningful member engagement opportunities leading to rewarding association with IEEE.

In 2019 he has served IEEE Region 10 as Vice Chair (Members Activities). His responsibilities included oversight of R10 Women-In-Engineering (WIE), Young Professionals (YP) and Student activities. For 2021-2022 he has been given the responsibility of IEEE R10 Vice Chair (Technical Activities) and my team consists of Chairs of following R10 committees: Technical Conferences & Conference Quality Management, Industry Relations, Awards & Recognitions, Humanitarian Activities and R10 Information Management Committees.

TENCON 2021 Conference Closing Plenary	
16:20 - 16:35	Technical Paper Awards Tek Tjing Lie and Ramon Zamora
16:35 - 16:45	Robotics Competition Awards By IEEE R10 Vice-Chair of Technical Activities Zia Ahmed
16:45 - 16:55	TENCON 2022 Presentation by IEEE Hong Kong Section Chair Paulina Chan
16:55 - 17:10	TENCON 2021 Formal Closing Nirmal Nair

Tek Tjing Lie



Ramon Zamora



Zia Ahmed



Paulina Chan



Nirmal Nair





ENGINEERING
DEPARTMENT OF ELECTRICAL,
COMPUTER, AND SOFTWARE ENGINEERING

