



INSTITUTE OF
ELECTRICAL AND
ELECTRONICS ENGINEERS

QUEENSLAND SECTION

ABN 67 431 648 974

ANNUAL GENERAL MEETING REPORT FOR 2020

PRESENTED AT
BRISBANE EXHIBITION AND
CONVENTION CENTRE

ON
20 NOVEMBER 2020

ieee-qld.org

2020 AGM REPORT Contents

Section Chair.....	3
Section Vice Chair	4
Section Secretary.....	6
Section Treasurer	7
Community Manager.....	11
Membership Development.....	12
Awards and Recognition	14
Student Activities	17
Women in Engineering	19
Computational Intelligence	20
Computer Chapter	22
Control Systems Robotics and Automation.....	24
Power and Energy/Dielectrics and Insulation.....	27
Microwave Theory & Techniques/Antennas & Propagation Societies	29
Young Professionals Affinity Group.....	31
Power Electronics/Industrial Electronics/ Industry Applications Societies.....	32
Blockchain & Internet of Things.....	33
UQ PES Student Branch	35
Queensland University of Technology Students	38
Newsletter Editor.....	40

Section Chair



Nilesh Modi
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It was a pleasure to volunteer as a section chair for the second time. This report highlights key contributions of the volunteer who worked tirelessly throughout the year to provide value to the IEEE members and societies. This year was different relatively to previous years because of the Pandemic. The section executive committee met face to face in February and then all subsequent monthly meetings occurred online. To facilitate section volunteers in organizing webinar and online meeting section purchased zoom.

This year the section celebrated the IEEE Day. The IEEE Day is celebrating the first time in history when engineers worldwide and IEEE members gathered to share their technical ideas in 1884. One of the IEEE Day's objectives is to show the ways thousands of IEEE members in local communities join together to collaborate on ideas that leverage technology for a better tomorrow. We celebrate IEEE members! The celebration was held on 6 October 2020.

Once again, this year section received '2020 Region 10 Best Membership Retention Medium Section Award' from Region 10. I would like to congratulate section committee member who have worked hard to retain members. The PES-DEIS Joint Chapter won 2019 IEEE PES High Performing Chapter Award from the Power and Energy Society.

Since last couple of years section has increased its effort for online presence. You may have noticed an increase in our social media presence this year. We have started to engage broader community through LinkedIn, Facebook and Twitter. I encourage you to connect with us through social media.

As we wrap another exciting year, I would like to thank all the volunteers, including those who participated in the event, for their contribution to the section activities. It was a pleasure to work with energetic team members of the section. I wish everyone all the very best for the festive season.

Section Vice Chair



Dr Alexandra Posoldova
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Serving a second year as Vice-Chair, I focused on increasing online presence of section. As majority of IEEE member engagement consist of organising events, we had to figure out how to continue to provide value to members while complying with COVID restrictions. As a result, I created a section email address used for social engagements and started a Zoom account. This year, majority of the events were held online and we found some benefits in doing so such as inviting speakers from overseas without the need to substitute their travel cost. We also started to record online events and with help of the Chair of Blockchain and IoT chapter, Matthew Hutchins, we started a Youtube channel. Section Secretary and Community Manager, Jennifer Zapata, has also been active in increasing our online presence and started section Instagram and Twitter account.

With COVID restriction easing in second half of the year, section organised the first face to face event to celebrate IEEE Day. This event was well attended, and the Brisbane Convention and Exhibition Centre was very diligent with their COVID safety plan that we all followed.



The second half of the year was dedicated to elections for the upcoming year, which are now closed, and appointed volunteers will be announced at the AGM. There are still some vacant positions in the Queensland section, and I encourage potential volunteers to reach out to me with expressions of interest. All EOIs will be considered and volunteers will be appointed to vacant positions at the first committee meeting in February 2021.

Last year at the Annual Dinner we had record number of attendees with high number of companies and universities buying dinner table. We hope to replicate the success this year and attract just as many attendees. Here in Queensland, we are blessed with a low number of COVID cases and would like to celebrate end of the year as it was a particularly challenging one.



Section Secretary



Jenniffer Zapata
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This year marks my second year serving as secretary of the section. I am delighted to have participated as an active volunteer in a year that has tested all of us. Queensland Section only had a couple of in-person meetings due to the pandemic. However, thanks to Alexandra's efforts, we acquired a ZOOM license so the section could host the executive meetings online and the section chapters could use it for online events.

There is now a Gmail account for the section where we can save past photos, reports and documentation. This is an important way of keeping track of section documentation and also, to have a plan for role succession with the future volunteers.

Australia's effort to contain COVID-19 allowed us to celebrate IEEE Day. We organized a small meeting with drinks and canapés. 20 people attended the event and it permitted us to reconnect and see each for the first time in months.

Finally, I would like to spread hope and kindness to everyone that it is reading this report. We have had an extremely challenging year, but we have come victorious and we will continue to impact the world through IEEE.



From left to right: Tara Shabab, Marie-Luise Wille, Vaughan Clarkson, Jenniffer Zapata.

Section Treasurer



Vaughan Clarkson
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Summary

It being the year of the COVID-19 pandemic, it is not surprising that an organisation like IEEE Queensland Section, whose purpose is to build a sense of technical community by organising activities and events, has found it more difficult than usual to spend money. This year, such events as have been held have tended to be online. The cost of online activities is much lower than a face-to-face event, where catering would ordinarily be a part of the budget. On the other hand, the rebates the Section received from higher-level organisational units in IEEE, which form the main income for the Section in “ordinary years”, has not appreciably changed. As a result, the net worth of Qld Section, which rose extraordinarily during the 2019 reporting period, continued to rise in 2020. The 12-month period reported here is from 1st November 2019, to 31st October 2020. Net worth increased from \$131,314.44 to \$136,289.06, representing 3.8% annual growth.

Income

Rebates from higher-level organisational units in IEEE (Region 10 and MGA) were roughly static between this year’s report period and last year’s, rising 2.7%. This is despite a decline in Qld IEEE membership, which fell from 1218 to 1106, or just over 9%, between the two Section rebate census dates.

For the third year in a row, the AGM & dinner in 2019 was held at BCEC (and will be held there again this year). For the first time, company tables were sold for the dinner, which proved to be popular. Ticket sales more than doubled, compared to 2018, rising from \$2,588.42 to \$6,179.89.

On account of the paucity of activities over the reporting period, due to COVID-19, GST credits were substantially lower, falling from \$3,037.40 in last year’s report to \$887.00 in this year.

The interest received, at \$1,217.00, is more than a third lower than last year, when it was \$1,926.40. This was expected and noted in last year’s report, because of falling interest rates. Even lower returns can be expected next year, as interest rates continue to fall.

Expenses

Overall expenditure in 2020, at \$21,183.65, is well down on last year’s expenditure, at \$30,494.24. This reflects the slow year for activities resulting from COVID-19 restrictions on assembly and travel. Travel expenditure has been dramatically lower, at \$242.38 compared with \$5,532.53. What little is reported is due to pre-pandemic activities. This reduction in travel costs accounts for more than half of the fall in total expenditure.

The gross expenditure on the 2019 AGM & dinner came to \$9,479.89, combining amounts from this reporting period and the previous one (since expenditure straddles the boundary). This compares with \$8,569.49 in 2018 and represents an increase of 10.6%. Net cost, however, is down, since, as reported above under Income, higher ticket sales more than offset the increase in cost. For the 2020 AGM & dinner, a conscious decision has been made to increase spending as some measure of compensation to members for the otherwise meagre year.

A new expenditure line in this year's report is for subscriptions. To facilitate online meetings, the Section purchased an annual subscription to Zoom. To better market our activities, the Section also took a three-month subscription to the VivaVideo video editing service.



**IEEE MEMBER AND GEOGRAPHIC ACTIVITIES DEPARTMENT
STATEMENT OF REBATE
2020**

R00553 Queensland Section

18 Jun 2020

SECTION ALLOWANCE: \$2,000.00

Member Breakdown:

Member	699 @ 3.00 ea.	\$2,097.00
Graduate Student Member	144 @ 3.00 ea.	\$432.00
Student Member	72 @ 3.00 ea.	\$216.00
Associate Member	11 @ 3.00 ea.	\$33.00
Affiliate	15 @ 1.50 ea.	\$22.50
Senior Member	161 @ 4.00 ea.	\$644.00
Fellow	4 @ 4.00 ea.	\$16.00

Total Member Rebate: \$3,460.50

Subsections *(For eligible, qualified Subsections):* \$0.00

Chapters *(w/Acceptable # of Events, 2@\$200.00 ea.):* \$400.00

Joint Chapters *(w/Acceptable # of Events, 4@\$200.00 ea.):* \$800.00

Affinity Groups *(w/Acceptable # of Events, 1@\$200.00 ea.):* \$200.00

Subtotal 2020 Rebate \$6,860.50

Met deadline = 10% Bonus \$686.05

- Less Deductions \$138.86

Total 2020 Rebate: \$7,407.69

Activity Bonus *(if requirements are met):*

Section Bonus:	\$0.00
Subsection(s) Bonus:	\$0.00
Chapter(s) Bonus:	\$0.00
Joint Chapter(s) Bonus <i>(3@\$75.00 ea.):</i>	\$225.00
Affinity Group(s) Bonus:	\$0.00

Net 2020 Rebate: \$7,632.69



**IEEE MEMBER AND GEOGRAPHIC ACTIVITIES DEPARTMENT
UNIT BREAKDOWN
2020**

R00553 Queensland Section

18 Jun 2020

CHAPTERS

Organizational Unit	Mem	T	NT	P	A	Total	Base Amount	Timeliness Bonus	Activity Bonus	Total
CH10097 Queensland Section Chapter, C16		0	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00
CH10325 Queensland Section Chapter, CIS11		0	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00
CH10448 Queensland Section Chapter, AES10		2	0	0	0	2	\$200.00	\$20.00	\$0.00	\$220.00
CH10451 Queensland Section Chapter, EMB18		2	0	0	0	2	\$200.00	\$20.00	\$0.00	\$220.00

JOINT CHAPTERS

Organizational Unit	Mem	T	NT	P	A	Total	Base Amount	Timeliness Bonus	Activity Bonus	Total
CH10096 Queensland Section Chapter, PE31/DEI32		9	0	0	1	10	\$200.00	\$20.00	\$75.00	\$295.00
CH10153 Queensland Section Jt Chapter, SP01/COM19		10	1	0	0	11	\$200.00	\$20.00	\$75.00	\$295.00
CH10240 Queensland Section Jt. Chapter, CS23/RA24		1	0	0	0	1	\$0.00	\$0.00	\$0.00	\$0.00
CH10281 Queensland Section Jt. Chapter, AP03/MTT17		10	0	0	0	10	\$200.00	\$20.00	\$75.00	\$295.00
CH10810 Queensland Section Jt. Chapter, PEL35/IE13/IA34		3	0	0	0	3	\$200.00	\$20.00	\$0.00	\$220.00

AFFINITY GROUPS

Organizational Unit	Mem	T	NT	P	A	Total	Base Amount	Timeliness Bonus	Activity Bonus	Total
WE00553 Queensland Section Affinity Group, WIE		0	1	1	0	2	\$200.00	\$20.00	\$0.00	\$220.00
YP00553 Queensland Section Affinity Group, YP		0	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00

2020 Financial Report

Period: 1st November, 2019–31st October, 2020			
Treasurer: Vaughan Clarkson			
<u>Income</u>		<u>Expenses</u>	
IEEE member rebates	\$10,540.51	Account-keeping fees	\$ -
IEEE other section rebates	\$5,060.05	Australia Council levy	\$ -
IEEE student branch rebates		Professional activities	\$44.53
GUGC	\$142.87	2019 AGM & dinner	\$8,448.50
IEEE other chapter rebates		2020 AGM & dinner	\$3,850.00
IoT/Blockchain	\$1,167.62	Awards & recognition	\$716.00
MTT/AP	\$963.33	Student thesis prizes	\$1,500.00
2019 AGM & dinner	\$6,179.89	Travel	\$242.38
GST credit	\$887.00	Section meeting catering	\$ 297.05
Interest received	\$1,217.00	Student/HKN membership	
		subsidies	\$ -
		EA/IET/IEEE Fraternity	
		Dinner support	\$ -
		Subscriptions	\$254.86
		2020 IEEE Day events	\$2,421.00
		Conferences 101 event	\$1.41
		Student Branches	
		UQ	\$106.10
		Chapters, Affinity Groups & Honour Societies	
		AES	\$123.00
		HKN	\$1,270.57
		PES/DEIS	\$1,408.25
		WIE	\$500.00
Total income	\$26,158.27	Total expenses	\$ 21,183.65
<u>Assets</u>		<u>Liabilities</u>	
ANZ Brookside 014203			
Cheque Account	\$ 61,289.06		
469430083			
Business Notice Term	\$ 25,000.00		
Dep (1yr) 911003659			
Business Notice Term	\$ 25,000.00		
Dep (2yr) 911003931			
Business Notice Term	\$ 25,000.00		
Dep (3yr) 914758977			
Total assets	\$136,289.06	Total liabilities	\$ -
Net worth	\$136,289.06		

Community Manager



Jenniffer Zapata
Jenniffer.zapata@ieee.org

This is my second year as community manager, and I must say, I have enjoyed it thoroughly. Queensland Section has now a social media presence in the main platforms such as Facebook, Twitter, Instagram and LinkedIn, therefore, do not hesitate in following us and like our publications!

I have created different campaigns for raising awareness of the IEEE Queensland such as the "Why do you volunteer?" and also, different videos that show viewer Queensland Section Activities.

Finally, my goals for the next year are to create a social media manual in order to control that what we publish as an organization is ethically correct; to create the Queensland Volunteer Spotlight and to help section chapters with the marketing of their activities.



Membership Development



Sudarshan Dahal
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Membership Status

IEEE Queensland section has 1023 active members as of 10 November 2020. This number has slightly declined from 1039 during the same period last year. The detailed breakdown of the membership categories is shown in the following tables.

Table I. IEEE QLD Section Membership Status in 2020

Queensland Section	IEEE Grades	Associate Member	11
		Fellow	5
		Graduate Student Member	99
		Life Fellow	1
		Life Member	35
		Life Senior	19
		Member	643
		Senior Member	146
		Student Member	50
		Other Grades	Affiliate
		SA Member	1
Total			1,023

Table II. IEEE QLD Section Membership Status in 2019

Queensland Section	IEEE Grades	Associate Member	11	
		Fellow	4	
		Graduate Student Member	94	
		Life Member	32	
		Life Senior	14	
		Member	663	
		Senior Member	143	
		Student Member	64	
		Other Grades	Affiliate	13
			SA Member	1
	Total			1,039

Membership Development Activities

IEEE Queensland Section organised various membership development activities this year. Some of the events to highlight are below.

- 1) *Membership Development Activities – Universities*
Events were organised at various universities (Queensland University of technology, Central Queensland University, Griffith University and The University of Queensland)
- 2) *Membership Development Activity – Industry*
This year, the planned industry event had to be cancelled due to COVID-19 restrictions as well as the unavailability of the speakers.
- 3) *Senior membership Drive*
The section invited applications from eligible members to apply for senior member. The applicants were assisted to find suitable referrers. About 3 members have been successful in elevating to senior member this year.

What Next

IEEE Queensland section has seen a decline in membership this year. Closer looks at Table I and II shows that there have been sharp declines in member grade and student member grade as compared to the previous years. Section should prioritise the membership-focussed events in the coming years.

IEEE Queensland section has big potential to increase its membership base. One of the major areas that section can work on is to engage industry professionals in IEEE activities. So far, there has been comparatively few interest and engagement from industry.

The section should also work with local engineering body to promote its uniqueness and significance of becoming IEEE member among professional communities.

Section should also organise motivational programs for existing members for member retention. Especially for student members who are aspiring for better careers the section could bring various supportive programs to help them achieve their goals and keep them connected with IEEE.

Awards and Recognition



Amin Mokaribolhassan
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This year the Awards and Recognition committee has retained the award structure used in previous years. The awards process is also the same as 2019, which commenced early in the year immediately following the year being evaluated.

There are three award categories for section volunteers and two award categories for student members. While student awards are not administered by the Awards and Recognition committee, they are mentioned here for completeness.

The first volunteer award category is Recognition of Service awards. These are an official recognition of a person's contribution in a particular role and are awarded at the first AGM following the completion of a person's term in a role. These awards do not require a nomination.

The second volunteer award category is Outstanding Contribution awards, given to people who have been identified as having made a significant contribution during their term in a role. They are awarded at the first AGM following the completion of a person's term in a role. These awards require a seconded nomination from members of the IEEE Queensland Section, along with a reason for the nomination, to be submitted to the section committee.

The third volunteer award category is the Volunteer of the Year award. This is awarded to the person who is regarded as having made the most substantial contribution during their time in office. Only people who have completed their term of office are eligible. A single plaque is awarded each year. Nominations from members of the IEEE Queensland Section are submitted to the section committee for final selection of Volunteer of the Year.

Since 2019, the IEEE Queensland section initiated new awards to recognize the contribution from section members. These awards are as below:

1. IEEE QLD Outstanding Young Professional
2. IEEE QLD Outstanding Women in Engineering
3. IEEE QLD Outstanding Student Volunteer

The QLD section committee formed a committee of at least three members to server on the judging panel after receiving nominations from the committee members.

-Recognition of Service Awards

Due to the low rate of the contribution for the retired officers, no one was eligible to get this award.

-Outstanding Contribution Awards

Due to the low rate of the contribution for the retired officers, no one was eligible to get this award.

-Volunteer of the Year Award

Due to the low rate of the contribution for the retired officers, no one was eligible to get this award.

-Outstanding Young Professional Award

A Young Professional is defined by the IEEE as someone who has graduated from their first professional degree within the past 15 years. The winner is *Mehdi Mosadeghy* due to his outstanding project in NOJA POWER to deploy the synchrophasors in medium voltage (MV) distribution grids. The partnership between ARENA, AEMO, Energy Queensland, Aus Net Service, the UQ, and Deakin University.

-Outstanding Women in Engineering Award

The Women in Engineering award is open to WIE affinity group members and members that have contributed to advancing the WIE professional environment at large. This award is not gender specific. The winner is *Negareh Ghassemi* for her outstanding leadership in WIE and successful delivery of International leadership summit.

-Outstanding Student Volunteer Award

A student is identified as a member with an IEEE student or graduate student membership. The winner is *Farzad Farajizadeh* as he has been with section for few years and for his outstanding effort as a secretary of the IEEE QLD PEL/IE/IA Chapter and organizing several events, seminars, and workshops.

-Undergraduate Student Thesis Awards

A vote was taken by the judging panels of three members of the IEEE Queensland Section committee and the outcome is as below:

- 1) IEEE Student Prize for the best final year thesis in all fields of Electrical Engineering and Information Technology: “*Somayeh Hussaini* (Thesis title: Deep Learning Temporal Features in the Context of the Vision-Based Aircraft Detection)”
- 2) IEEE Student Prize for the best final year thesis in Power Engineering: “*Jianing Chen*, (Thesis title: Understanding the Impact of Minimum System Demand on Future System Stability with a Focus on Queensland System)”
- 3) IEEE Queensland Section’s Signal and Image Processing: “*Jade Newing*, (Thesis title: Investigation into Automated Classification of Paediatric Swallowing Sounds through Machine Learning)”

-PES Travel Prize Awards

Every year PES is offering travel award for students to attend IEEE PES GM. This year this conference is held in virtual mode and PES awarded USD 200 to 4 students to cover the conference registration fee. The students who received this award are:

1. *Mr. Ruiyuan Zhang* - On Sky Imaging Analysis and Deep Learning for Photovoltaic Output Nowcasting
2. *Mr. Lei You* - Optimal Co-Allocation Plan of Dynamic Line Rating and FACTS for Wind Integration Considering Forecast Uncertainties
3. *Mr. Mohammad Imran* - Regulated P2P Energy Trading: A Typical Australian Distribution Network Case Study
4. *Mr. David Amoateng* - A Deep Unsupervised Learning Approach to PMU Event Detection in an Active Distribution Network

-PES Outstanding Engineer Award

This annual award recognises outstanding technical, professional, and society contribution on behalf of the power and energy profession. The winner is Mr. Tim George for 2019 Chapter Outstanding Engineer Award For contribution in power industry for more than forty years in power systems planning, operation and recently in renewable energy integrations

-PES Outstanding Volunteer Award

No one was eligible to get the award.

Student Activities



Ebby Thomas
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Being a year of unprecedented calamities, I would opine that 2020 was not that colourful at least in terms of student activities when compared to last years.

Undeniably, student branches are one of the vital ingredients in the IEEE Queensland section. As student branch members are non-professionals, they often thrive through students' social gatherings, non-technical events, face-to-face interactive sessions and other numerous non-formal occasions. In fact, it is through these occasions that we attract new members to IEEE, whom in future would transform themselves into great assets for the Section. Unfortunately, the year 2020 demanded all of us to stay away from each other. The year started with some good communications happening with the Student Branches that are located away from Brisbane – CQU and USQ.

There was active participation from the side of UQ, QUT and Griffith. UQ has 3 active Student Branches – IEEE, PES and HKN. Both QUT and Griffith has an active Student Branch – and all these Universities are determinable in shaping the future of IEEE Queensland Section.

The new world after the start of Covid also helped the students to reach out to the technical seminars, workshops, conferences and interactive sessions from anywhere in the world! I also took the opportunity in attending the Student Membership and Leadership Summit that was hosted by Bangladesh Section in the month of August. PES Student

Congress was one of the other international conferences that the students made good use of.

One of the most notable activities from the Student Branches (UQ) was the event on how to become a professional chartered engineer. QUT had organised a Technical Seminar & Workshop and Seminar on Effects of Covid on Power Sector. Griffith University was also involved in multiple seminars/workshops and it seems like they are progressing towards an event that would make the graduates more capable to sustain a technical interview adapting to the Australian context.

UQ PES Student Branch did a handful of events of which one was focused on a highly successful space startup (HEO Robotics) in Australia – the experience in the entrepreneurship, and the next the sharing of an “interviewer” experience. It is notable that amidst the pandemic, UQ HKN amazed us inducting 6 new members into the IEEE HKN family. With regular meetings with guest speakers and stunning attendance rates, the volunteers and supporters actively managed to maintain the high reputation of the first HKN chapter in the country. UQ HKN also had couple of other events – a notable one where they invited a power system entrepreneur.

In short, the Student Branches of IEEE Queensland Section admittedly quitter than the past years, but the diligence Students, Faculty members and other volunteers put to keep this moving is truly appreciated.

We look forward to work with more vigour in the forthcoming years – post pandemic. We look forward for active collaborations across the globe from various Student Branches with the support of the Section. Moreover, we are open to innovative ideas and plans from the side of students. Our main motive being in retaining

the existing membership, utilise it in the most effective way to align with the goal of IEEE as well as to attractive young and energetic members to our group.

Women in Engineering



Negareh Ghasemi
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Committee

Chair: Negarah Ghasemi
Vice Chair: Marie-Luise Wille
Secretary: Tara Shabab

IEEE Women in Engineering QLD section hosted an online event on June 11th. The event was about “how to Keep a Balance between Work and Personal Life while Working from Home due to COVID-19”.

IEEE Women in Engineering had an online panel discussion with female industry professionals about the challenges of working from home during COVID-19 pandemic.

The panel, Sarah Browne, Brighter program director, and Negin Beaton, the development and communications coordinator for UQ WIE shared their experiences during the pandemic and work-from-home lifestyle.

The panel shared the challenges they faced and talked about their solutions to manage changes to their work and life routines.

In addition, QLD IEEE WIE team had an online meeting to plan for promoting WIE nationally and internationally through online social media like QLD IEEE WIE Facebook page by posting and updating our Facebook page with WIE news.

Computational Intelligence



Alexandra Posoldova
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Committee:

Chair: Alexandra Posoldova

Vice chair: Andrew Lewis

Website: www.facebook.com/IEEEComputationalIntelligenceQLD

The Computational Intelligence chapter has struggled over the past two years as the group of volunteers championing this chapter has slowly dissolved. As chair, I was hoping to bring this chapter back to life and increase member engagement.

I started a Facebook page dedicated to Computational Intelligence. The page now has 41 followers and growing.

Two events were organised this year, both online. The first event, Technology Predictions for Pandemics, was delivered by Dejan Milojicic, a distinguished technologist and director at Hewlett Packard labs and IEEE Presidential candidate in 2019.

The poster features a dark blue background with a glowing city skyline at the bottom left and a large blue globe in the center. The IEEE logo is in the top left, and the IEEE Computational Intelligence Society logo is in the top right. The event title is prominently displayed in the upper middle.

IEEE
Advancing Technology
for Humanity

Technology Predictions For Pandemics

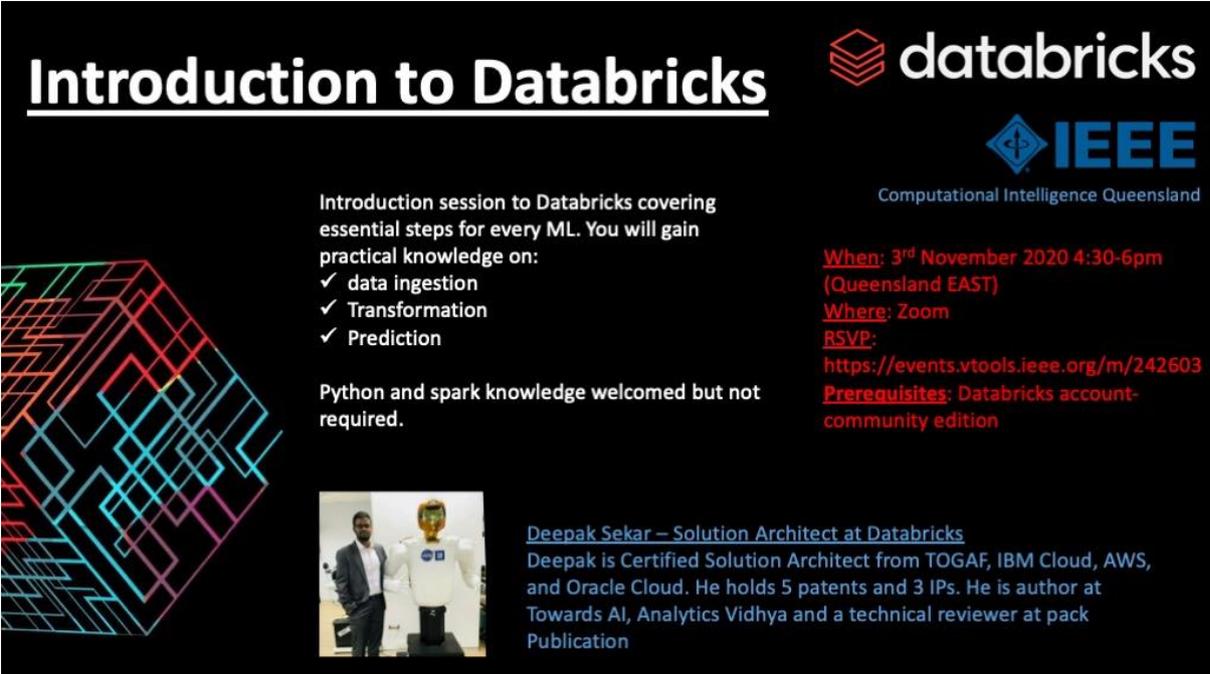
**IEEE Computational
Intelligence
Society**

Where: Zoom
When: Jun 30th , 12-1pm AEST

Dejan is a distinguished technologist and director at Hewlett Packard Labs, Palo Alto, CA [1998-]. Dejan is an IEEE Fellow (2010), ACM Distinguished Engineer (2008), and HKN and USENIX member. He was president of IEEE Computer Society (2014) and IEEE Presidential candidate (2019).

Abstract: Predicting the future is never easy, it always entails a degree of uncertainty, if not luck. Predicting technology trends is even harder as it requires both technical and business acumen, e.g., whether the technology will be developed, productized, and ultimately adopted on the market. It is almost an art to distinguish between a fashion and a true scientific trend. At the same time, the public likes to read predictions and many individuals and organizations regularly write technology predictions, such as Gartner, MIT, Forbes, and many others. Predicting technology in times of pandemics carries even more weight as it deals with human lives and economies of many nations, and the humanity as a whole.

The second event was held in November. It was a Databricks workshop delivered by Deepak Sekar, a Solution architect at Databricks.



Introduction to Databricks

Introduction session to Databricks covering essential steps for every ML. You will gain practical knowledge on:

- ✓ data ingestion
- ✓ Transformation
- ✓ Prediction

Python and spark knowledge welcomed but not required.

When: 3rd November 2020 4:30-6pm (Queensland EAST)
Where: Zoom
RSVP: <https://events.vtools.ieee.org/m/242603>
Prerequisites: Databricks account-community edition

Deepak Sekar – Solution Architect at Databricks
Deepak is Certified Solution Architect from TOGAF, IBM Cloud, AWS, and Oracle Cloud. He holds 5 patents and 3 IPs. He is author at Towards AI, Analytics Vidhya and a technical reviewer at pack Publication

Both events were recorded, and recordings can be found on the section's Youtube channel.

Computer Chapter



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Committee:

Chair: Vladimir (Vlad) Estivill-Castro

Vice-Chair: Ji Zhang

Welcome to the Computer Society Chapter's Report. This has been a particularly difficult year to organise events in Queensland because for the first six months of the year it was rather difficult to have any gatherings.

In the second half we tried to organise some webinars where we could have an invited speaker and a discussion session afterwards.

Since producing correct software is hard, we tried to create an agenda in the area of software testing, software quality and software verification. We have been trying to secure speakers who have received a best paper award in software validation and verification to contribute to the meeting.

On this aspect we were able to secure the participation of Zhen Dong, Senior Research Fellow, National University of Singapore. His research won the **ACM Distinguished Paper Award at ICSE'20**. He serves as a senior researcher at the National Satellite of Excellence in Trustworthy Software Systems, Singapore. He is currently serving on the Board of Distinguished Reviewers of ACM Transactions on Software Engineering and Methodology

Dr. Zhen Dong delivered a webinar titled "TIME-TRAVEL TESTING OF ANDROID APPS" 02 Sep 2020 at 05:30 PM to 07:00 PM.

There were 10 people attending and the abstract of the talk was: *"Today mobile apps are everywhere and used in almost every aspect of our daily lives. Mobile app testing is the key to ensure apps work reliably and securely and has been attracting significant attention from both academia and industry. In this talk, I will give a brief introduction on mobile app testing and summarise mainstream mobile app testing techniques. In the end, I will present our recent work "Time-travel Testing of Android Apps" (published at ICSE'20). Unlike existing works that focus on input sequence generation, our work captures app states during testing and prioritises exploring states from which it is highly likely to trigger new program behaviour such that more program behaviour can be discovered in the given time."*

The webinar was particularly illustrative with all sorts of demos and techniques. Moreover, the central idea of having a program (a test-monkey) generate tests for an app and trying to crash it is simple. The challenge is to make the test-monkey a bit more meticulous and vicious. How would you try to make a program crash and automate those insights into a clever test-monkey?

We would like to invite all members of the chapter to make suggestions for more webinars to come in 2021. We accept suggestions for topics and speakers.

We have introduced the idea to award speakers at our events an IEEE certificate for their commitment and time when they deliver seminars. This also enables the speaker to include this activity in their professional track record. We also suggest that attendees to the seminar could request an attendee certificate. This could also reflect on your personal professional development.

Looking forward to a more active 2021, we remain hopeful we can be of more service to chapter members.

Control Systems Robotics and Automation



Navinda Kottege
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Committee;

Chair: Navinda Kottege
Vice chair: Thierry Peynot
Secretary: Alejandro Melendez-Calderon

IEEE QLD Joint Chapter for Control Systems/Robotics and Automation Societies started the year with the expectation of hosting a number of events, both with invited speakers and also meet and greet events for the chapter members to network. However, due to the unprecedented impacts of the Covid-19 pandemic, many of our plans had to be changed. Despite these challenges, we are finishing the year after successfully co-hosting seven events.

On 21 January 2020 the IEEE QLD Joint Chapter for Control Systems/Robotics and Automation Societies along with CSIRO's Robotics and Autonomous Systems Group hosted Prof. Dana Kulić from Monash University at CSIRO's Queensland Centre for Advanced Technologies (QCAT) to present a guest lecture titled 'Learning from Human-Robot Interaction'. In the talk, Prof. Kulić described approaches for robot learning during interaction, considering robots in different roles and in a variety of applications, including rehabilitation, collaboration in industrial settings, and in education and entertainment. Prof. Kulić is the director of Monash Robotics at Monash University, Australia. The event was well attended by in-person participants as well as those dialling in to the talk via WebEx.



Fig 1. Prof. Dana Kulić delivering her talk at QCAT.

On 12 June 2020 the IEEE QLD Joint Chapter for Control Systems/Robotics and Automation Societies along with CSIRO's Cyber-Physical Systems Research Program hosted an online event with Prof. Tom Stace, Deputy Director, ARC Centre for Engineered Quantum Systems, University of Queensland and Dr. Lyle Roberts, Research Fellow, Australian National University, Co-Founder of Kyro Labs. The speakers reported on a collaboration that has developed two core new technologies:

- 1) solid-state beam steering based on a digital, electro-optical switch, and
- 2) phase-encoded random-modulation coherent LiDAR that simultaneously measures distance and velocity, and which is intrinsically immune to crosstalk and interference from other light sources. The combination of these technologies has the potential to enable high-performance, compact, solid-state LiDAR capable of operating in crowded environments. This talk generated a lot of interest within the online audience as the event was held via WebEx.

On 18 September 2020, the joint societies supported a webinar entitled *Design Robotics 2020: Inside the learning factory*. The event was co-organised by the Advanced Robotics and Manufacturing (ARM) Hub, QUT, RMIT, UAP (Urban Art Projects) and the Innovative Manufacturing Collaborative Research Centre (IMCRC). The webinar introduced Design Robotics as an industry and academic collaboration funded by the IMCRC to develop the use of innovative robotic vision systems and software user-interfaces to reduce the integration time between design and custom manufacturing. The 2-hour event featured robotic demos, insights and current and future research in the area, and was attended by around 40 people.

On 22 September 2020, Andrew Scott, Principal Innovator at Symbiotic Innovations, past Chair and co-founder of the Global Mining Guidelines group, and Chair of Queensland Robotics, presented a seminar on the *Implementation Guideline for Autonomous systems in Mining*, which was hosted at the QUT Centre for Robotics in Brisbane and online, and attended by around 40 people. In his talk Andrew provided insight into important aspects and consideration of introduction of autonomous systems into an industrial environment of mineral extraction, based on the published guidelines from the Global Mining Guidelines group, which is an industry-lead collaboration providing key guidance and reference material to the resource industry.

On 6 October 2020, the joint societies co-hosted a seminar by Distinguished Professor Peter Corke FAA FTSE FIEEE entitled *Teaching Robotics to Humans*. Among numerous prestigious awards and achievements, Peter was named Australian University Teacher of the Year in 2017 by the Australian Government's Department of Education and Training and was awarded the title of Distinguished Professor by QUT, recognising his truly outstanding achievements in the emerging field of Robotics. The event was held at the QUT Centre for Robotics in Brisbane and online and was popular with more than 70 attendees. In this talk Prof. Corke discussed the story of an award-winning body of work for robotics education (software, books and online), sharing very insightful observations and lessons on robotics education, and sketching an outline of the future of robotics education.



Fig 2. DProf. Peter Corke talking about Teaching Robotics to Human at the QUT Centre for Robotics

On 10 November 2020, the joint societies co-hosted a technical webinar by Dr. Teresa Vidal Calleja on *Continuous and Probabilistic Models for Integration, Localisation, Mapping and Planning*, again with the QUT Centre for Robotics. Teresa is Deputy Head of School (Research) at the School of Mechanical and Mechatronics Engineering, University of Technology Sydney (UTS) and core researcher at the Centre for Autonomous Systems. In this talk she presented recent work based on Gaussian Process (GP) for continuous and probabilistic models, with applications to the problems of localisation, surface reconstruction and local planning.

On 10 November 2020, along with CSIRO' Robotics and Autonomous Systems Group, the joint societies co-hosted a technical webinar by Mr. Joonho Lee on *Learning quadrupedal locomotion over challenging terrain*. This was based on their recent paper published in the prestigious Science Robotics Journal, where Mr. Lee is the first author. He is from the Robotics Systems Lab, ETH Zürich where he is reading for his PhD degree.

Power and Energy/Dielectrics and Insulation



Chandimah Ekanayake
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Committee:

Chair:	Dr Chandimah Ekanayake
Vice-Chair:	Prof. Tapan Saha
Secretary:	Amin Mokaribolhassan
Industry Engagement:	David Batterham

Year 2020 was a challenging year for organising events due to COVID-19 restrictions. However, PES/DEIS chapter has managed to organise a number of successful virtual seminars with local and international experts. The PES/DEIS chapter has offered some seminars with together with the other PES chapters in Australia.

Highlights of 2020

Organised 14 events. All these events were technical seminars conducted online due to COVID-19 restrictions.

PES chapter was recognized as one of the High Performing Chapters under the High Performing Chapters Programs in 2019.

PES Chapter awarded four student travel prizes for student members to register and present paper at the 2020 IEEE PES General Meeting conference, held online.

Mr. Tim George (Managing Director at DigSILENT Pacific) was recognized as the 2014 IEEE PES Outstanding Engineer for his professional activities and contribution to the power and energy profession.

PES chapter won the bid to run the ISGT Asia 2021 in Brisbane. The conference will be held in Brisbane Convention and Exhibition Centre between 5-8 December 2021.

Technical Seminars:

1. Online Partial Discharge Measurement - Advantages and limitations by Luca Garagnani of machinemonitor@.
2. Transformer oil analysis: identification & management of abnormal conditions by Phil Reilly of Ampcontrol
3. Quality Assurance of Transformers by Ronnie Minhaz of Transformer Consulting Services Inc.
4. My experience as an E.S. Cornwall Scholar: Enhancing the role of national planner by Christopher du Plessis of AEMO
5. Hornsdale Power Reserve Technical and Market Impact by Steve Wilson of Aurecon

6. Analytical method to aggregate multi-machine SFR model with applications in power system dynamic studies by Qingxin Shi of University of Tennessee, Knoxville, USA.
7. IEEE 1547 DER Interconnection Standard-Overview by Charlie Vartanian of Pacific Northwest National Laboratory
8. Role of the Smart Grid in Facilitating the Integration of Renewables by Saifur Rahman of Virginia Tech, USA
9. COVID-19 Impacts on Power System - Australian Experience by Jaart Van Der Walt and Mike Davidson of AEMO
10. Impact on the incorporation of renewable sources of variable generation in the National Electric System in Mexico by Christian Perez-Negron of National Energy Control Centre, Mexico
11. Toward a More Resilient Cyber-Physical Power Grid with High Penetration of DERs by Junbo Zhao of Mississippi State University, Starkville, MS, USA.
12. The business case for behind-the-meter energy storage - Q1 performance of UQ 1.1MW Tesla battery by Andrew Wilson and Prof. Pita Ashworth of the University of Queensland.
13. A Full-view Synchronized Measurement System and its Applications in Power Systems by Dr. Hao Liu of North China Electric Power University
14. Transition to a high DER future - a distribution network perspective Daniel Eqhbal of Energy Queensland.

PES Chapter student travel awards

Every year PES is offering travel award for students to attend IEEE PES GM. This year this conference is held in virtual mode and PES awarded USD 200 to 4 students to cover the conference registration fee. The students who received this award are:

- Mr. Ruiyuan Zhang
- Mr. Lei You
- Mr. Mohammad Imran
- Mr. David Amoateng

PES Outstanding Engineer award

We are pleased to announce that the IEEE PES-DEIS joint Chapter of Queensland has selected Mr. Tim George for 2019 Chapter Outstanding Engineer Award For contribution in power industry for more than forty years in power systems planning, operation and recently in renewable energy integrations. Congratulations Tim for your dedication to the power industry.

ISGT 2021

The International Conference on Innovative Smart Grid Technologies (ISGT Asia 2021), sponsored by the IEEE Power & Energy Society (PES), will be held from 5-8 December 2021 at the Brisbane Convention and Exhibition Centre in Brisbane.

Microwave Theory & Techniques/Antennas & Propagation Societies



Hugo Espinosa
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Committee

A/Chair: Hugo Espinosa

Secretary: Anthony Stancombe

Treasurer: Ahmed Toaha Mobashsher

This year, all activities were hosted on-line due to the world's pandemic. One of the advantages of conducting on-line presentations is the collaborative work among chapters from different Australian states. The idea of co-hosting webinars allows for more engagement, attendance and networking of participants. In addition, it allows for an increase of presentations from Distinguished Lecturers (DL's), that would not be possible in the face-to-face mode due to the requirement of a maximum number of DL's that a Chapter can host per year.

Participants from academia, industry, PhD candidates, undergraduate students, etc., had the opportunity to attend several presentations from DL's this year. In August, we hosted our first webinar from Prof. Meisong Tong. Prof. Tong presented a meshless modelling approach for solving computational electromagnetics problem. This modelling approach provides a high degree of flexibility when the physical shape of the objects changes as time evolves.

In early September, our AP-DL Prof. Fan Yang shared with us his latest research in the field of reflectarrays. In mid-September, we co-hosted MTT-DL Dr. Edward Ackerman who discussed the background and applications of microwave photonics – using photonics technology for conveying microwave signals. For the first time, this was an event jointly hosted by IEEE New South Wales, Victoria, Northern Australia, and South Australia Chapters.

In early October, we had the opportunity to host AP-DL Prof. Dr. Levent Sevgi, who presented the topic: "From engineering electromagnetics towards electromagnetic engineering – teaching and training next generations". His presentation aimed at a broad-brush look at certain teaching / training challenges that confront wave-oriented EM engineering in the 21st century, in a complex computer and technology-driven world with rapidly shifting societal and technical priorities. Approximately 60 participants attended the presentation. Due to the nature of Prof. Sevgi's presentation, Vice-chair Hugo Espinosa invited undergraduate students from his engineering course: Electromagnetic Fields and Propagating Systems. After the presentation, students were invited to write a reflection and to provide insights about the topics discussed during the webinar. The feedback provided by students was highly positive. Special thanks to Chapter Chairs Enn Vinnal (Victoria), Shengjian Chen (South Australia), Syed Muzahir Abbas (NSW), and Jacob Mohan and Janina Mazierska (Northern Australia), for their support in co-hosting the presentation.

In late October, we co-hosted another webinar from DL Prof. Atef Elsherbeni, who presented the topic: “SAR and Temperature Rise in a Human Head due to EM Radiation for Frequencies up to 100 GHz”. The presentation focused on the development and simulation procedure to determine the specific absorption rate (SAR) and the corresponding temperature rise due to electromagnetic waves incident on a human head.

The chapter would like to take this opportunity to thank Queensland Section for your continuous support over the years.

A note from the acting Chair Dr. Hugo Espinosa: I would like to thank Dr. Antony Lui for his years of valuable volunteering work within the MTT/APS Chapter. His hard work and dedication have contributed to maintain a very solid and successful chapter. I wish him all the best in his career.

Young Professionals Affinity Group



Marie-Luise Wille
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The Young Professionals (YP) Affinity Group started the year with only one committee member and the overall aim was to redefine the Young Professionals Group and to increase membership numbers. However, the year 2020 turned out very differently and because of COVID-19 only part of our aims could be achieved.

We had a series of strategic planning meetings in the first half of the year where we gathered feedback from current members and former members about their expectations of Young Professionals and any recommendations of improvement. With great excitement we could also welcome Jenniffer Zapata Giraldo to join the YP committee. Jenniffer has been a very active YP volunteer prior to moving to Australia and her knowledge will benefit the committee beyond 2020.

On August 10th we held a Zoom webinar titled “**Revamping your career in COVID-19 times**” featuring Georgia Ridler who is the HDR Career Educator at QUT. Georgia gave a 35 min presentation about the top 3 strategies of how to articulate our skills and value proposition to revamp our career in COVID-19 times. The event was very well received by 18 participants who actively joined the Q&A after Georgia’s presentation.

For the remainder of the year we are focussing on the re-definition of YP, which will start with a new look into 2021.

Power Electronics/Industrial Electronics/ Industry Applications Societies



Mahinda Vilathgamuwa
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Committee

Chair:	Mahinda Vilathgamuwa
Vice chair:	Junwei Lu
Secretary:	Farzad Farajizadeh
Treasurer:	Firuz Zare

This year amidst the Covid-19 pandemic, PEL/IE/IA joint chapter has managed to organize or co-sponsor a number of technical activities.

Particularly, our Ph.D. symposium co-organized by QUT and Griffith universities has generated a lot of interest. There were around 20 attendants to that seminar and some interesting technical discussions were held at the end of the symposium. The following is the list of technical events organized or co-sponsored by the chapter this year.

- 1- "Living Lab Test Facilities in Queensland" (PECT Seminar, 1 May 2020)
- 2- "Concentrated Solar Thermal (CST): What is it, why do we need it, how do we get Australian markets to invest in it?" (PECT Seminar, 5 June 2020)
- 3- "Managing Transmission System Strength in the Transition to Renewables" (PECT Seminar, 3 July 2020)
- 4- "Hornsedale Power Reserve Technical and Market Impact" (PECT Seminar, 7 August 2020)
- 5- "Protection Challenges and Potential Solutions on Lines Supplied by Inverters" (PECT Seminar, 2 October 2020)
- 6- "Superconductivity: Yesterday, Today and Tomorrow" (PECT Seminar, 13 November 2020)
- 7- "IEEE QLD PEL/IE/IA Joint Societies Chapter Ph.D. Symposium" (PEL/IE/IA Joint Societies Chapter Ph.D. Symposium)

Blockchain & Internet of Things



Matthew Hutchins
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Committee:

Chair: Matthew Hutchins
Vice Chair: Alexandra Posoldova
Secretary: Ali Dorri

Blockchain and IoT interest group was founded by Alexandra Posoldova and Matthew Hutchins in July 2019. Both founders are passionate about emerging technologies and wanted to engage with the Queensland section members through events covering cutting-edge technologies such as blockchain and the Internet of Things. We are interested in exploring emerging technologies and the impact they can have on our everyday lives. The here and now application of emerging technology, how it can help lives and drive positive change is a true passion for our members.

Moving into 2020 the Blockchain & IoT special interest group had two continuing volunteers in Matthew and Alexandra who were excited to have Ali on board to extend the reach in supporting and growing the group within IEEE QLD section and the greater technical community.



In 2019 we received funding from R10 and organised 2 successful events debating emerging technologies in Blockchain, IoT and AI space. With some funding left, we intend to organise AI focused panel discussion that will examine opportunities as well as pitfalls in this high interest area. However, due to requirements to socially isolate, we postponed this event until further notice.

During the Covid 19 lockdown we successfully ran the event “How are industries responding to Covid-19 changing landscape? A Blockchain, Sustainability & Innovation session”. We received 31 registrations and 13 attendees on the day, entertaining and informative deep dive with Queensland’s Chief Entrepreneur Leanne Kemp who provided a window into the future and valuable perspective across a wide array of talking points. A recording of the event was uploaded on the IEEE QLD YouTube channel and made open for public viewing.

The recording can be found here: <https://www.youtube.com/watch?v=YgXhi1dhH-4>

For the remainder of 2020 the Blockchain & IoT special interest group will continue to search for events and community activities that add value to IEEE QLD, its members and the community in relation to emerging technologies and new trends that are shaping humanity and the way we live our lives.

UQ PES Student Branch



Indira Alcaide-Godinez

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Committee:

Chair: Indira Alcaide-Godinez
 Vice-Chair: Xin Zhong
 Secretary: Anupam Dixit
 Treasurer: Gayan Lankeshwara

In 2020, UQ PES Student Branch started with face-to-face events to promote IEEE membership among undergrad and postgrad UQ students. However, due to COVID-19 restrictions, next events were organised online with more than 20 attendees each. UQ PES Student Branch 7 different events so far, and 1 last event planned to be carried out by the last week of November.

Highlights of 2020

- Organised 7 events, which 2 were face-to-face and 5 online.
- UQ PES Student Branch was recognized as one of the High Performing Branch under the High Performing Chapters Programs in 2019.

IEEE Promotion among 4th Year Electrical Engineering and Master's UQ Students



Why should I join ?

- To keep yourself technically current.
- Career resources and recognition
- To build a network around your profession, projects and industry.
- To be a part of humanitarian programs.
- To enjoy reduced rates on many proprietary products and services.



Are there any benefits for me here in Australia ?

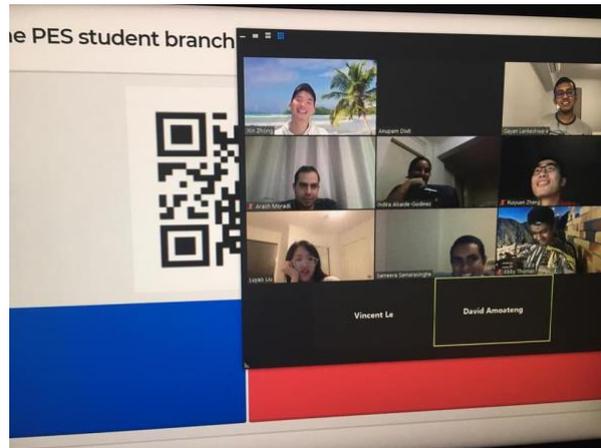
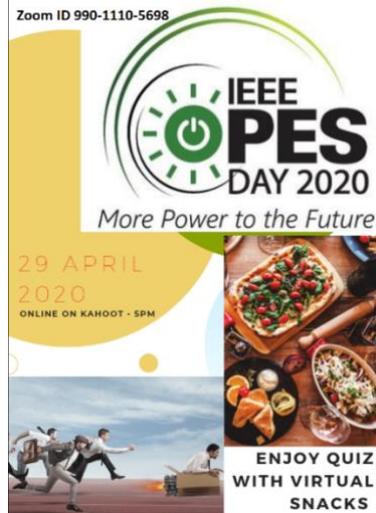
- IEEE Australia Council Student Branch Awards
- IEEE Queensland section Thesis Prizes for **Undergraduate students**
- IEEE Power and Energy Society student travel awards
- IEEE Power and Energy Society Outstanding Student Scholarship (for **Masters students**)



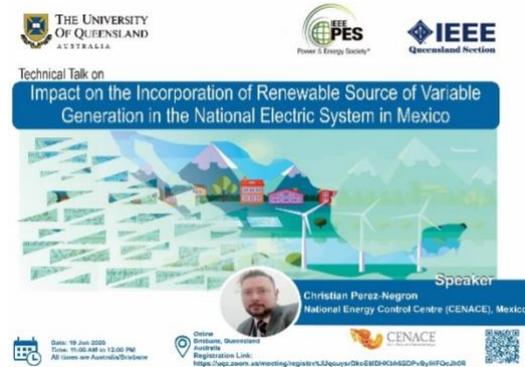
Membership drive at UQ 1st Year Engineering Student Orientation



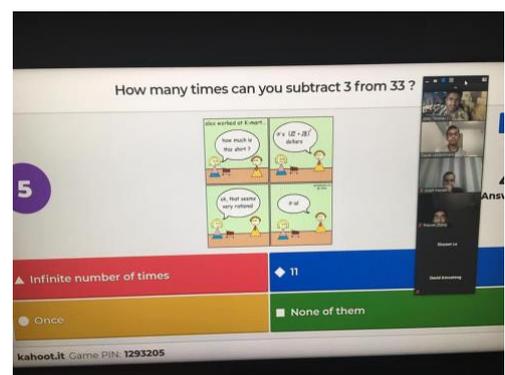
Celebrating the IEEE PES Day



Technical Seminar 1: Impact on the Incorporation of Renewable Source of Variable Generation in the National Electric System in Mexico



Quiz Time



Technical Seminar 2: A start-up in the Space



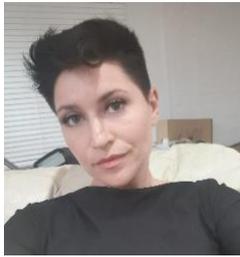
Webinar: Interviewer Experience Sharing



Upcoming Event: First and Last Year Event (FLY) 2020

This is planned to be our first and last gathering event of 2020 where at least 20 students are expected to have fun and provide relevant feedback regarding our past events.

Queensland University of Technology Students



Alexandra Makieieva
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Committee:

Chair: Alexandra Makieieva (oleksandra.makieieva@qut.edu.au)
Vice Chair & Treasurer: Amin Mokaribolhassen (a.mokaribolhassen@qut.edu.au)
Secretary: Shaetrun Pathmanathan (shaetrun.pathmanathan@ieee.org)
Counsellor: Ghavameddin Nourbaksh

Although shortly after the above executive committee was inducted to duty after the local lockdown was lifted, this inspired the cause of a seminar. “**How COVID-19 has impacted**

How COVID-19 has affected our Electricity Market

Date:
Thursday 24th
September 2020

Time:
2pm – 3pm

Location:
Online

Cost:
Free

Registration Link:

<https://qr.go.page.link/G5r4g>

ABOUT THE EVENT

COVID-19 has affected many facets of our daily lives. One such, is our power consumption, production and retention. Associate Professor Geoffrey Walker of Queensland University of Technology will discuss these ramifications within this free, interactive webinar. These effects and how the power market may perform will be explored.

Q+A with the presenter will precede the event

Members, Non-members (especially undergrads) of all levels are welcome!

Registration essential to attendance

ABOUT THE PRESENTER

Dr Geoff Walker joined the Queensland University of Technology (QUT) Electrical Power Engineering group as an Associate Professor in 2013. His current research interests lie in applying power electronics to applications in renewable energy (especially PV), power systems, and electric vehicles.

From 2008 to 2013, he worked as a senior electrical engineering consultant in Aurecon's Transmission and Distribution group, Brisbane, across various areas including rail traction, earthing studies, electricity transmission planning, and renewable energy project design and review.

Australia's Energy Market" was explored by QUT Science and Engineering's Acting Head of School, Associate Professor Geoff Walker. The interactive webinar was carried out on the 24th of September. Although virtual, the chapter's first event attracted a range of members not only from within Queensland but as far afield as New Zealand. Associate Professor Geoff Walker explored the pandemic's effect on power usage and pricing with respect to industry reports provided by AEMO Australia.

As part of an initiative for recruiting new members, the QUT chapter sought to create a greater on-campus presence by initiating an official university-based club. Due to pre-existing clubs with overlapping motives, alternative collaboration was encouraged instead.

Future Work

Stemming from ideas of other chapters, a range of membership drives are to be executed where possible. As part of a monthly seminar series targeted towards undergraduate students nearing the end of their degree, a series of seminars specifically for the case of transitioning into the workforce would be planned.

Robotics Seminars run in collaboration with the Faculty of Science and Engineering's Robotics departments as well as Trivia Nights are to be forecasted for the next Academic year, in an effort to attract and provide value to students of a wide range of backgrounds.

Newsletter Editor



David Spear
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This year has given a whole new meaning to 2020 vision. We have been challenged and we have risen to that challenge. This year has been my first year as an active member of the IEEE Queensland Section and I thank the executive for all of the help and guidance that they have given me.

This newsletter and a mid-year publication were the only newsletters this year as we regrouped to work online. We have learned a lot from 2020 and we are fortunate to

have so many talented and resourceful people within the Queensland Section.

I have waited far too long to become an active member and I encourage all members to reach out to Alexandra with Expressions of Interest and volunteer for an unfilled position.

Thank you to all chapter and society committees for your guidance and contributions.