



INSTITUTE OF  
ELECTRICAL AND  
ELECTRONICS ENGINEERS

# QUEENSLAND SECTION

# ANNUAL REPORT FOR REGION 10

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# Section Chair's Report



**Daniel Eghbal**  
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I would like to start my report by giving a summary of the outstanding performance of Queensland Section in 2018.

- Queensland Section's chapters and affinity groups organised 70 technical and professional events including technical seminars, workshops, and distinguished lecture seminars that attracted 1500+ delegates in total.
- Queensland Section was recognised as the R10 Outstanding Medium Section Award in recognition and appreciation of valued services and contributions.
- Queensland Section was the recipient of the R10 Best Membership Growth Medium Section Award.
- Queensland Section PES/DEIS chapter was awarded Outstanding Chapter runner up award for the 6<sup>th</sup> time in a row.
- IEEE Queensland Section hosted three flagship international events:
  - International Conference on Radar (the world's premier international conference on radar systems)
  - International Conference on Robotics and Automation (the biggest annual IEEE robotics conference in the world; established in 1984)

- IEEE Women In Engineering International Leadership Summit (WIE ILS)

You can find more information about 2018 events in the three newsletters that were published in 2018 and are available online from [Queensland Section's website](#)

The section committee has about 70+ positions including members of the section executive committee, chapter and affinity groups' officers, student branch volunteers and student councillors. All officers are volunteers and elected annually. The full list of 2019 officers and any vacant positions will be announced during the Annual General Meeting on 28 November. I would like to thank all the nominating committee members for their help in achieving this result. If you are looking for an opportunity to give back to your community and work with a great team of enthusiastic volunteers, I encourage you to consider volunteering for a vacant committee position.

2018 is the second and last term for me as the section chair. I would like to thank all IEEE volunteers that I had the pleasure to work with in 2018 and wish the 2019 committee all the very best. I look forward to meeting you at the AGM on 28 November.

## Vice Chair's Report



**Nilesh Modi**

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This was my second term as vice-chair for the section. I have enjoyed volunteering for this second term as much as first term.

We had another productive year with 70+ activities that includes activities carried out by our enthusiastic volunteers. The section received several accolades during this year. The details can be found in Chair's report.

We had a wide variety of activities held in the section ranging from casual journal club meetings to professional leadership summits. This shows the strength of the section in successfully organizing various events. The breakdown of the events

organized by section, chapter and affinity group is shown below.

The call for nominations for next year's positions is now complete. The results of the elected office bearers will be announced at the Annual General Meeting. Congratulations to all elected officers. I look forward to working with you all in providing better value to our members.

It was a pleasure to work with an active section. As I finish my term as vice-chair for the section, I wish all the best to incoming vice-chair.

Entity	Number of events
Section	4
Aerospace and Electronic Systems Chapter (Chair)	4
MTT/AP chapter	10
Computer Society	2
CQU	2
Computational Intelligence Chapter (Chair)	2
Control Sys/Robo & Auto Chapter (Chair)	2
Engineering in Medicine & Biology Chapter	2
Griffith Univ - Gold Coast Campus	7
PES/DEIS Chapter	8
PEL35/IE13/IA34	3
QUT	10
Signal Pro & Comms Chapter	12
Women in Engg	1
Young Professionals	2

# Treasurer's Report



Vaughan Clarkson  
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## Summary

The financial activity of the Section over the period I am reporting here – from 6 November 2017 to 31 October 2018 – could broadly be described as “unremarkable”. The pattern of income from IEEE rebates and bank interest and the spending on activities follows the usual pattern. The net worth of the Section has increased from \$94,761.88 to \$97,824.84, representing a little over 3% growth.

Two major activities are being supported by the Section: the 2018 International Conference on Radar and the aforementioned WIE ILS. The former was held 27–31 August and the latter on 26-27 November, both at the Brisbane Convention & Exhibition Centre. The financial picture for the WIE ILS is unclear at the time of writing, but finances are now finalised for Radar '18. More on that below. The banking facilities for both conferences have been maintained as sub-accounts of the Section's operating account at Bank Australia.

The Section has decided this year to begin a process of transitioning its banking arrangements. For many years, the Section's accounts have been held with Bank Australia. Following repeated problems with receiving international wire transfers, the Section will instead bank with ANZ. A new cheque account has been established there. The entire balance of the main “Everyday Access” account at Bank Australia was transferred to ANZ on 24 October, including the balances of two of three term deposits at Bank Australia which had matured and been closed the month before. When the remaining term deposit matures in May 2019, its balance too

will be transferred to ANZ. The intention is to re-establish all three term deposits at ANZ over the coming months.

The accounting practice used to compile the attached 2018 Financial Statement differs from those in recent years in that transfers between internal accounts are not listed. Formerly, identical amounts appeared as both income and expense in such instances. I believe the new practice gives a better picture of the true volume of Section transactions.

## Income

Rebates from IEEE are approximately the same for 2018 as for the previous two years.

Income for the 2017 annual dinner is split between this year's report and last year's but it is clear that ticket sales for 2017 are about five times higher than they were for 2016. This is a result of a deliberate decision by the Section committee to lift the standard of the annual dinner. (The increased income is somewhat offset by increased expense.)

No income is shown for this year's annual dinner because a different mechanism is now being used for ticket sales. Instead of tickets being purchased by direct deposit into the Section's bank account, this year we are using the Eventbrite service, to take advantage of their credit-card facilities. As a result, the income from ticket sales will not be recouped by the Section until after the dinner has been held.

The overwhelming majority of the interest received can be attributed to the maturation of the two term deposits with Bank Australia

which have now been closed. As mentioned above, they will be re-established at ANZ.

### Expenses

The categories under which expenses are listed are different from those used in previous years in a few cases, meaning that direct item-for-item comparison is not possible in all cases. Allowing for that difference, the spending on chapter, affinity group and honour society (HKN) activities, totalling \$2,178.11, is less than a quarter of last year's tally.

The final cost of the annual dinner is expected to be higher this year, though this is not yet fully reflected in the financial statement. The higher expected cost results from the decision to hire a recognised speaker, Penny Locaso, rather than to call on a local technical or business leader.

### Radar '18

The 2018 International Conference on Radar was held 27–31 August at the Brisbane Convention & Exhibition Centre. It was attended by 302 delegates, of which more than 40% were international. The conference follows a fixed rotation, coming to Australia every five years since replacing Japan in 2003, but this is the first time the conference has been held in Brisbane. A report on the technical aspects of the conference is included here in the report for the AES chapter.

The AES Society was the technical sponsor. The conference was financially sponsored (underwritten) by Queensland Section and South Australia Section, having equal shares. Both Sections supplied \$20,000 in seed funding last year.

A professional conference organiser, Arinex, was engaged to manage the conference. The conference is now in the final stages of close-out, with Arinex expected to deliver a final report in the coming weeks. The financial situation is, however, finalised and can be

summarised here. Conference income was \$464,432 and expenditure was \$444,679. Both figures include the conference exhibition and the receipt and return of seed funding. The surplus was \$19,753 before GST. Additionally, there is a small amount, \$520.59, remaining in the Radar '18 bank account which will be split between the sponsors. The surplus and seed funding do not appear on the financial statement because the amounts had not been transferred back to the Section bank accounts before the end of the period reported here.

### Assets, Liabilities and Net Worth

The net worth of the Section is calculated in the attached financial statement by a slightly different accounting method to previous years. That is, the value of conference assets is shown according to the amount of seed funding supplied rather than the current balance of the conference bank account (which is not always known and, where it is, does not necessarily reflect the value of the conference as an asset).

There is a break in continuity with the reported value of net worth in 2017 because of:

- the change in accounting practice;
- an unrecorded liability in the 2017 (& 2016) report, namely the reserve allocation that became payable on 1 July 2016; and
- an unrecorded cheque, written on 3 November 2017, but not formally debited until 6 November 2017.

In the 2017 report, the net worth is recorded as \$78,134.26. To arrive at the starting value of net worth in this report, it is necessary to subtract the balance of the Radar '18 bank account at that time, \$520.59, add the seed funding, \$20,000.00, subtract the value of the cheque, \$1,000.00, and subtract the unrecorded liability, \$1,851.79.

# Secretary's Report



**Alexandra Posoldova**

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Year 2018 was my first year as Secretary of IEEE Queensland Section.

It was a year of innovations to improve the quality of meetings and audio experience for those connecting online. For the first months of the year (from February until June), meetings were held at Advanced Engineering Building #49, Room 49-601 at the University of Queensland, St Lucia Campus. With support of the section chair Daniel Eghbal and the committee, speakers were used as audio enhancers as well as for recording.

Later this year, with help of Tapan Saha, committee meetings were occasionally held at Advanced Engineering Building #49, Room 49-601 where the professional conference set up facilitated audio as well as the visual component of meetings for those connecting online.

Despite a few hiccups, this year was definitely a step-in right direction and meeting attendees reported better audio quality.

I would like to express my gratitude to committee members for sending me their reports and to committee chair Daniel Eghbal for reviewing meeting minutes before publishing.

Statistics of committee members' attendance in the meetings are compiled and provided in the following table. Average attendance for year 2018 is 31%.

Attendance	Attended	Apology	Absent	Attended %
Daniel Eghbal	8	1	0	89
Nilesh Modi	4	4	0	44
Alexandra Posoldova	9	0	0	100
Vaughan Clarkson	8	1	0	89
Garry Einicke		0	9	0
David Russell	6	3	0	67
Farzad Farajizadeh	4	3	1	44

Attendance	Attended	Apology	Absent	Attended %
Mehdi Mosadeghy	5	3	1	55
Sudarshan Dahal	2	5	1	22
Marcus Jiang	2	2	5	22
Rasoul Garmabdari	7	0	3	78
Mostafa Esmaili	2	1	6	22
Tapan Saha	5	4	0	55
Jan McSweeney	2	4	3	22
Marie-Luise Wille	8	1	0	89
Negareh Ghasemi	5	3	1	55
Hanxiao Zhang	6	2	1	67
Jason Williams	7	2	0	78
Ken Morris	1	3	5	11
Amit I-Singh	1	4	5	11
Andrew Lewis	3	6		33
Garima Samvedi	1	1	7	11
Toshi Sinha	2	2	5	22
Zahra Jadidi	1	0	8	11
Amin Gharipour	2	3	4	22
Luis Mejias Alvarez	2	2	5	22
Navinda Kottege	0	2	7	0
Qing Zhang	1	1	7	11
Mohanraj Karunanithi	0	2	7	0
Vanessa Smallbon	3	2	4	33
Morteza Shahpari	4	2	3	44

Attendance	Attended	Apology	Absent	Attended %
Antony Lui	1	0	8	11
Konstanty Bialkowski	2	2	5	22
Junwei Lu	0	2	7	0
Mohammadhossein Etesami	5	1	3	55
David Batterham	1	6	2	11
Greg Hislop	1	2	6	11
Muhammad Mohtasim Sajjad	3	2	4	33
Sohrab (Rob) Makaremi	6	3	0	67
Nazanin Nadian	4	4	1	44
Reuben Peterkin	7	0	2	78
Ghavam Nourbakhsh	0	2	7	0
Nima Khoshsirafat	6	1	2	67
Mac Akmal Jahan	3	1	5	33
Chandrama Sarker	1	1	7	11
Chandima Ekanayake	3	6	0	33
Blake Alexander	2	0	7	22
Sean Lin	3	0	6	33
Vishy Datla	2	1	6	22
Sascha Stegen	2	1	6	22
Ian Ockenden	1	0	8	11
Serena King	1	0	8	11
Ben John	2	0	7	22
Stephen So	0	2	7	0
Carl Kleinschmidt	0	1	8	0

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Attendance	Attended	Apology	Absent	Attended %
Jade Newing	1	0	8	11
Navinda Kottege	1	2	6	11
Ebby Thomas	7	0	2	78
Wriece Madessery	2	3	4	22
Joshua Riddell	1	1	7	11
Samuel Eadie	0	1	8	0
Lucas Rabenhorst	1	1	7	11
Ashley Gillman	0	1	8	0
Michael Guihot	3	1	5	33

# Awards and Recognition Report



**Xinren Jiang**  
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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 2017, 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.

## Recognition of Service Awards

A total of 21 Recognition of Service awards were presented by the IEEE Queensland Section in 2018.

Recipient	Role
Alexandra Posoldova	Women in Engineering Chapter Vice Chair Young Professionals Chapter Vice Chair
Ben John	GU Gold Coast Student Branch Chair
Chandima Ekanayake	Power and Energy Chapter Chair
David Batterham	Power and Energy Chapter Vice Chair
Ebby Thomas	UQ PES Student Branch Vice Chair
Garry Einicke	Aerospace and Electronic Systems Chapter Chair
Ghassem Mokhtari	Committee Webmaster Engineering in Medicine & Biology Chapter Secretary
Ghavam Nourbakhsh	Committee Secretary
Hanxiao Zhang	Women in Engineering Chapter Treasurer
Kianoosh Soltani Naveh	Eta Kappa Nu Society Chair
Konstanty Bialkowski	Microwave Theory and Techniques / Antennas and Propagation Joint Chapter Chair

Recipient	Role
Kourosh Parsa	Control Systems / Robotics and Automation Joint Chapter Chair
Lakshitha Naranpanawe	UQ PES Student Branch Chair
Mark Broadmeadow	QUT Student Branch Counsellor
Mohammadhossein Etesami	Power and Energy Chapter Treasurer
Mojtaba Moghimi	Committee Student Activities Chair
Morteza Shahpari	Microwave Theory and Techniques / Antennas and Propagation Joint Chapter Vice Chair
Nazanin Nadian	Power and Energy Chapter Secretary
Negareh Ghasemi	Women in Engineering Chapter Secretary
Nikodem Rybak	Control Systems / Robotics & Automation Joint Chapter Secretary
Robert Kennedy	Committee Treasurer

### Outstanding Contribution Awards

10 Outstanding Contribution awards were awarded by the IEEE Queensland Section in 2018.

Recipient	Role
Alexandra Posoldova	Women in Engineering Chapter Vice Chair Young Professionals Chapter Vice Chair
Ben John	GU Gold Coast Student Branch Chair
Ebby Thomas	UQ PES Student Branch Vice Chair
Ghassem Mokhtari	Committee Webmaster Engineering in Medicine & Biology Chapter Secretary
Ghavam Nourbakhsh	Committee Secretary
Kianoosh Soltani Naveh	Eta Kappa Nu Society Chair
Konstanty Bialkowski	Microwave Theory and Techniques / Antennas and Propagation Joint Chapter Chair
Lakshitha Naranpanawe	UQ PES Student Branch Chair
Morteza Shahpari	Microwave Theory and Techniques / Antennas and Propagation Joint Chapter Vice Chair
Robert Kennedy	Committee Treasurer

**Volunteer of the Year Award** - A vote was taken by members of the IEEE Queensland Section committee and **Robert Kennedy** was elected Volunteer of the Year for 2017.

**Undergraduate Student Thesis Awards** - The outcome will be announced in late 2018.

**PES Travel Prize Awards** - IEEE Queensland Section PES/DEIS chapter has been supporting outstanding PES student members from Queensland universities to attend the IEEE PES General Meeting to present their papers/posters in the USA. The PES Travel Prize (\$1,000 each) was awarded to two recipients in 2018:

- **Huajie Gu**, Paper titled: "Minimum Synchronous Inertia Requirement of Renewable Power Systems" from The University of Queensland.
- **Junhyuck Seo**, Paper titled: "Analysis of Vibration Signal for Power Transformer's On-Load Tap Changer (OLTC) Condition Monitoring" from The University of Queensland.

**PES Outstanding Engineer Award** - This annual award recognises outstanding technical, professional, and society contribution on behalf of the power and energy profession. The 2017 winner is **Ian Rose** from Ernst & Young.

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# Newsletter Editor's Report



**David Russell**  
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It has again been a pleasure to be involved with IEEE and the Queensland Section this year as Newsletter Editor.

We published newsletters in April and July with this report summarising the successful year IEEE Queensland has enjoyed again this year.

I thank the many members who have contributed content to the newsletters. I appreciate their efforts to contribute as I know we all have busy lives. Hopefully the newsletters have served to keep members informed of the many activities the Queensland Section has undertaken. As Daniel has highlighted in the Chair's report 70+ technical professional events is an achievement of which to be proud.

While the newsletters often act as a record of the events that have taken place, where we could, we tried to put future events into the newsletters in the hope this gives our members a greater chance to plan their attendance

At the end of the newsletter archive section of our website there are guidelines for submitting content for the newsletter. It is helpful if these are followed.

Finally, please feel free to circulate the newsletters to colleagues and friends who may be interested in the activities of IEEE.

I hope you all have a safe and happy holiday season and you will continue to see interesting articles in the newsletters next year.

# Webmaster's Report



**Farzad Farajizadeh**  
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This is the second report I am writing as webmaster of IEEE Queensland section. I am really happy that my nomination to work in this position has been approved once again by the committee members and hope to have a better performance in the new round.

Good news is the migration of the website domain is progressing well. It is not only an effective step to unify the frame work of all IEEE sections around the world, but also makes a safer and more reliable infrastructure for the website.

After finalizing the elections for the committee, we need to update the website with the changes. This demands all the members' assistance to update me with their new roles. So, please notify me with your current position and attach your headshots.

Along with updating the website with the recent changes, I am planning to do a couple of refinements on the website which would be as follows.

1. Making news to be more observable.
2. Updating the home banners with the new events that we have ahead.
3. Asking for your ideas and suggestions for the website and finding out an effective way to apply them.

I started to work on the first topic four months ago and am looking for some experts to apply the changes in a safe and acceptable way.

For the second item, I would appreciate if all members could update me with the events that we will have in the near future. Please also send me their photos with width to height ratio of 3.26% and preferably a pixel range of higher than 1140x350 resolution so they will appear as a high-quality image on the banner. This would be wonderful if it can be synchronized with the news. If the news owner sends me photos of their event along with their news topic, I will be able to connect the photo to the news. I think it would be a great step to make the website more interactive and dynamic.

Finally, we are a team of experienced and wonderful people with remarkable and different points of view. If people share their ideas and suggestions, great success can be achieved. The website also is not an exclusion, it is a tool to link us together and ultimately to the world. Please, share your ideas with me, and I will do my best to make the website an effective tool for your views.

In advance, I appreciate your consideration, and I hope we will continue the wonderful teamwork in the new year.

# Membership Development Report



**Sudarshan Dahal**  
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IEEE Queensland section has 1208 active members as of 9 November 2018. This number was 1105 during the same period last year. The detailed breakdown of the membership categories is shown in the following table.

Region	Council	Section	Grade Category	Grade	Total
R10	Australia Council	Queensland Section	IEEE Grades	Associate Member	23
				Fellow	3
				Graduate Student Member	114
				Life Member	30
				Life Senior	14
				Member	770
				Senior Member	136
				Student Member	98
			Other Grades	Affiliate	19
			SA Member	1	
			Total		

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 event was organised at Powerlink Queensland as a technical seminar promoting IEEE activities and showing how IEEE can bring the opportunities to their workplace.
- 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 12 of the members have been successful in elevating to senior member so far.

## What Next

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 low interest and engagement from industry.

The section should also work with local engineering bodies to promote its uniqueness and significance 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.

# Student Activities



**Rasoul Garmabdari**  
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## Committee:

Chair: Rasoul Garmabdari  
 Vice Chair: Mostafa Esmaeili

In 2018, our efforts were concerted on organizing events that brought mutual benefits for IEEE QLD and IEEE student members. On the one hand, all the activities summarized in this report are sources of inspiration for students to subscribe or renew IEEE memberships. On the other hand, these activities would encourage students to think out of the ivory-tower box for better development of their academic or professional careers. Here is a summary of the events we have organized for the good old days of 2018.

### 1. Industry interview;

There has been an ongoing expansion of the “hidden job market” in Australia that is a cold shoulder to many qualified graduates who have devoted their time and energies overcoming the adversities of obtaining a university degree. Many employers have legitimate reasons to not advertise the vacant positions they need, instead they may consult with a recruiting firm or seek a referral from their current employees. Despite that, hundreds of job advertisements are being promoted every day. Yet, many graduates struggle to find opportunities commensurate with their hard-learned skills. Our contribution to resolving this conundrum was to organise mock interviews from actual engineering firms to relate local industries to students.

On 29 October 2018, five representatives from the Australian Energy Market Operator, Powerlink, and Jacobs interviewed the students at the University of Queensland. In

total 29 applicants registered, but due to bad weather conditions only 15 of them appeared at the venue. All the participants were given at least two sessions of 15 minutes during which they practiced their interview skills and received feedback on their CVs. The outcome was all smiles on both sides’ of their faces; the interviewers could target some candidates as the potential future employees without having to pay for recruiting agents, the interviewees gained some hands-on, face-to-face experience of job seeking.



### 2. Student thesis award;

Thesis competition for undergraduate students is an inherited activity from the former generations of IEEE that was held again this year. It would hearten students of bachelor’s degree to write a thesis worthy of this competition. The prize-winners will be

selected for three categories; Electrical Engineering and Information Technology, Power Engineering, and Signal and Image Processing.

### 3. Discounted tickets for Robowar competition at ICRA 2018

The annual International Conference on Robotics and Automation has always been a good substrate for other related public events. In May 2018, Brisbane Convention and Exhibition Centre accommodated the conference along with a few other events and competitions. IEEE Queensland Section provided discounted tickets for IEEE members for the Robowars competition, an interesting side event of the conference. The event and the competition were entertaining for the students, but also there was a good atmosphere for friendly networking and sharing of ideas with both academic and individual experts.



# Aerospace and Electronic Systems Society



**Jason Williams**  
[jlw@ieee.org](mailto:jlw@ieee.org)

## Committee:

Chair: Jason Williams  
 Vice Chair: Ken Morris  
 Secretary: Amit Singh

2018 brought two highlights for the Queensland chapter of the Aerospace and Electronic Systems Society (AESS). One was the International Conference on Radar, which was held in Brisbane for the first time on 27-30 August. This in turn provided an opportunity for chapter events with a number of distinguished speakers. The other highlight was welcoming a large number of new members from Boeing's Brisbane office.

The International Conference on Radar drew 309 delegates from 27 countries, covering a wide range of topics in radar systems and signal processing with 90 oral paper presentations and 42 posters. Keynote talks included Bruce Cornish of Boeing Phantom Works International, Dr Jaime Lien of Google's Project Soli, A/Prof Fauzia Ahmad of Temple University, and Dr James Palmer of Silentium Defence. Another highlight was a well-attended Women in Engineering (WIE)/Young Professionals (YP) panel session with keynote speakers, hosted by



WIE/YP panel session at Radar conference

IEEE Qld WIE Chair Dr Marie-Luise Wille and IEEE Qld YP Chair Rob Makaremi. The conference organising team included IEEE Qld representatives including Vaughan Clarkson (general chair), Robert Kennedy (treasurer) and Jason Williams (local arrangements chair).

Technical events included a talk from QUT PhD candidate Tharindu Fernando, distinguished lectures from Dr Giuseppe Fabrizio and Dr Eli Brookner, and a public event within the Radar conference program by Drs Don Sinnott and Gordon Frazer.

Mr Fernando presented his doctoral research using deep learning to model temporal data with both long-term dependencies, and contextual data from neighbouring trajectories. The work studied applications including prediction of civilian aircraft paths, and trajectories of pedestrians in video data.

Dr Fabrizio, Acting Research Leader of Surveillance and Reconnaissance Systems at DST Group, President of IEEE AESS, and author of the book "[High Frequency Over-the-Horizon Radar](#)," provided an introduction to over-the-horizon radar, contrasting typical parameters to microwave radar, and describing adaptive and non-adaptive methods for signal processing. He also outlined the benefits of AESS membership, including new initiatives such as the [AESS Resource Center](#), [mentoring](#), and [short courses](#).



*Distinguished lecture by Dr Joe Fabrizio*

Dr Brookner, who retired following a distinguished 50-year career with Raytheon, surveyed developments in Active Electronically Scanned Array (AESA) radar, focusing on the benefits provided by cognitive signal processing, and the low-cost solutions that are possible using metamaterials.

Finally, included in the conference program was a public lecture on the past, present and future of the Jindalee over-the-horizon radar network (JORN). The first part, which covered the historical development of JORN from



*Distinguished lecture by Dr Eli Brookner*

inception to concept demonstrator, was given by Dr Don Sinnott, who is a former Chief of Division at DST Group, former CEO of the Cooperative Research Centre for Sensor Signal and Information Processing and was involved in various aspects of the development. Dr Sinnott recently published a book on the development, entitled "[Radar Men: A.P. Rowe and John Strath in War and Peace.](#)" The second part, which focused on the phase 6 upgrade that is currently underway, was given by Dr Gordon Frazer, Research Leader for High Frequency Radar at DST Group.

# Computer Society



**Amin Gharipour**  
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## Committee:

Chair: Amin Gharipour  
Vice Chair: Rajib Rana  
Secretary: Rui Zeng

The Computer Science Society chapter has organised several successful meetings with students at Griffith university and Southern Cross University in 2018. The purpose of these meetings was promoting the CS chapter and gaining feedback to ensure activities meet student needs.

## Membership development meeting

We had two membership development meetings in 2018. The main aim of these meetings was ensuring the future growth of IEEE CS chapter in Queensland. In the meetings, students learned about the benefits and opportunities of IEEE CS membership. The IEEE CS activities in 2018 were as follows:

### 25 September 2018

Student Membership Drive  
Venue: Griffith University Gold Coast campus

### 8 November 2018

Student Membership Drive (for undergraduate students)  
Venue: Southern Cross University, Gold Coast campus

## Technical events

### 7 December 2018

1st Friday Journal-Paper Club  
Title: To be announced  
Venue: Griffith University Gold Coast campus  
Abstract: to be announced.

### 15 December 2017

Functional Fine-mapping of Noncoding Risk Variants Causes Amyotrophic Lateral Sclerosis Utilizing Deep Neural Networks  
Venue: Griffith University Gold Coast campus  
Abstract: to be announced.

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# Control Systems/Robotics and Automation Societies



**Luis Mejias Alvarez**  
[luis.mejias@qut.edu.au](mailto:luis.mejias@qut.edu.au)

**Committee:**

Chair: Luis Mejias Alvarez  
Vice Chair: Navinda Kottege  
Secretary: Nikodem Rybak  
Treasurer: Vacant

The CS/RA Society chapter had several events this year. The committee had active involvement in the International Conference on Robotics and Automation (ICRA) held in Brisbane in May. ICRA is the premier robotics conference in the field. Our chapter held joint events with the conference as well as standalone talks. We had Dr. Miguel Olivares from Luxembourg University talking about the research landscape and industry projects in

Luxembourg. We also had Robowars and ICRA-X which were events open to the general public on topics such as AI and robotics.

Thanks to all CS/RA chapter members for their contributions during 2018. Next year, there will be a change in roles and new exciting events.

# Engineering in Medicine and Biology Society



**Qing Zhang**  
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## Committee:

Chair: Qing Zhang  
 Vice Chair: Mohanraj Karunanithi  
 Secretary: Vanessa Smallbon

In 2018, there were changes to the IEEE QLD EMB chapter committee members (refer above).

## Activities

The chapter achieved three major events this year as follows:

### ***13 December 2017: Success and Failures in Implementing Technology across the Community Care Spectrum Innovation Round Table with Dr. Hirani***

IEEE Qld EMBS hosted an innovation morning tea round table discussion with Dr. Shashi Hirani of the City of London University. Shashi was one of the investigators on The Whole Systems Demonstrator Project - a Department of Health sponsored RCT evaluation of efficacy of telehealth and telecare in long term conditions and social care. The project was unrolled to 6,000 patients throughout Kent, Newham and Cornwall, making it the largest randomised control study of its kind in the world.



### ***19 April 2018: Ron Arkin's talk at the joint EMBC & SSIT event, Robots that Need to Mislead: Biologically-inspired Machine Deception***

IEEE QLD EMBS, together with SSIT, invited Dr. Ron Arkin from Mobile Robot Laboratory

in the College of Computing at Georgia Tech to give a presentation about the ethical implications of his research in producing deceit in robotic systems.



### **21 August 2018: SPS/EMBS Seminar - Prof. Matt McKay**

Prof. Matt McKay of HKUST presented a seminar on his most recent findings on the fitness landscape of the Hepatitis C virus, informed by statistical signal processing and unsupervised machine-learning techniques. The seminar was held at Brisbane Convention and Exhibition Centre and was co-hosted by IEEE Signal Processing Society and IEEE Engineering in Medicine and Biology Society.

In summary, the IEEE QLD EMB chapter engaged in conducting 3 prominent events for the year 2018. In doing so, the chapter events comprised of: joint events with Signal Processing Society and the Society of Social Implications of Technology to present talks in biomedical research and an innovation morning tea to discuss telehealth and telecare in long term conditions and social care. For the year 2019, this chapter plans to organize a distinguished lecture and career development event for young graduates in the profession of Biomedical Engineering.

# Microwave Theory & Techniques/Antennas & Propagation Societies



**Morteza Shahpari**  
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**Committee:**

Chair: Morteza Shahpari  
Vice Chair: Antony Liu  
Secretary: Konstanty Bialkowski  
Treasurer: Arslan Nizami

MTT-AP chapter organised 10 events through 2018. Therefore, we can claim that we had another successful year.

Particularly, we had a pretty strong start in February. Brisbane was the host of the Australian Microwave Symposium (AMS) and the committee tried to organise the best possible professional development programs for members. By leveraging a high number of professionals who visited Brisbane during AMS, we could organise three further events.

The day after AMS, Professor Christophe Fumeaux from the University of Adelaide shared his extensive knowledge and experience on the dielectric antennas. After the seminar, we had a tour of labs and experimental equipment in the University of Queensland. Later in the afternoon on the same day, we had Stefan Burger of elspec Group to discuss his professional experience on various coaxial cables.

Furthermore, we had four journal clubs throughout the year. We use the journal club to raise the awareness of the AP-MTT topics.

Our other professional speaker was Dr Thomas Fickenscher of Helmut Schmidt University (HSU HH). He discussed the radar cross section properties of wind turbines. He was also the host of one of the journal club meetings.

Finally, we secured a distinguished lecturer visit to Brisbane on 30 November. I would like to encourage all members to the seminar by Tadao Nagatsuma as he talks about "Millimetre-wave and Terahertz Applications Enabled by Photonics". The details of the event are as follows:

Date: 30 November 2018

Time: 04:00 PM to 05:30 PM

Room Number: 420, Building: 78, The University of Queensland, Staff House Road,

In closing, I would like to thank the MTT/AP committee for 2018 and also in past years for their support in running the chapter and in helping to organise this nice variety of events for our chapter.

# Mu Kappa Society



**Wriece Ponmattam Madassery**  
[wriece.ponmattammadassery@uq.net.au](mailto:wriece.ponmattammadassery@uq.net.au)

## Committee:

Chair: Wriece Ponmattam Madassery  
 Vice Chair: Joshua Riddell  
 Treasurer: Lucas Rabenhorst  
 Secretary: Samuel Eadie

Mu Kappa Chapter had a very successful year of activities. IEEE HKN Mu Kappa Chapter has organised an induction ceremony for their six newly elected members and their AGM on 15 March 2018. Six new members are inducted through a ritual induction ceremony, which was attended by most IEEE HKN Members of the Chapter along with the Faculty adviser Prof Tapan Saha and IEEE Queensland Section Chair Dr Daniel Eghbal. Newly inducted members were selected based on high calibre academic performance and other excellence criteria. The newly inducted Mu Kappa Chapter Members are-

- Mr. Sameera Samarasinghe
- Mr. Samuel Eadie
- Mr. Ruiyuan Zhang
- Mr. Aobo Zhou
- Ms. Yang Siqi
- Mr. Ebby Thomas



*Induction Ceremony*

After the induction ceremony, the Chapter AGM was conducted, where the past office bearers presented their activity reports and an election was conducted by Mr. Lakshitha Naranpanawe as the election commissioner. Our newly elected Committee of the Mu Kappa Chapter for 2018 are as below:

1. President: Mr. Wriece Ponmattam Madassery
2. Vice President: Mr. Joshua Riddell
3. Secretary: Mr. Samuel Eadie
4. Treasurer: Mr. Lucas Rabenhorst
5. Media officer: Mr. Ashley Gillman
6. Faculty Advisor: Prof Tapan Saha ([saha@itee.uq.edu.au](mailto:saha@itee.uq.edu.au))

Prof Tapan Saha and Dr Daniel Eghbal spoke on the occasion. Both have agreed to strongly support the Chapter activities during 2018. After the formal part of the function, a BBQ was organised for the Chapter members to celebrate the first year of activities of the Chapter.



2018 Mu Kappa Chapter members with IEEE Queensland Section Chair Dr Daniel Eghbal

## Panel Discussion

On 31 August 2018, IEEE Mu Kappa Chapter (HKN chapter of the University of Queensland) has held a successful panel discussion at Parnell Building, UQ. In the discussion, three invited guests shared their valuable experience and insightful ideas on 'Investigating Innovation', which is a hotspot in current society. The guests are from both industrial and academic societies.

Mr. Phil Livingston is a CEO of Redback Technologies, which is one of the most promising local start-up companies in renewable energy field. He shared his experience about entrepreneurship and his thoughts on how important innovation is for the company in its start-up stage.

Dr. David Noon talked about how to utilise innovation in managing a mature business. Dr. Noon is the Senior Vice President at GroundProbe, which ranks the first in terms of innovation ability among all the technology companies in Australia.

Prof. Shazia Sadiq, who works at UQ Data and Knowledge Engineering Research Group outlined her views on the importance of innovation in the research area. She explained how we can reflect innovation in our academic research and make a difference.

The speeches were followed by a Q&A, which led to a heated discussion between students and guests. All these speeches and discussions were well received by the audience.



## AEMO Control Room Visit

On 25 September the students of IEEE-HKN and some associates attended the Australian Energy Market Operator control room in Brisbane.

This is one of two control rooms in Australia which oversee the generation, distribution and consumption of electricity. The tour provided a great insight into what it means to operate on a complex and high-power electrical system. A presentation was given on the workings of the grid; such as the very short term – 5 minute – planning which allows the grid to be reactive, the medium-term plans which allow the grid to account for large television events and public holidays, and the long-term plans which shape Australia's energy roadmap.

The tour also included a trip in the site's control room simulator, with the circumstances of the South Australia blackout replayed on the screen before us. This served as a reminder of one of the main challenges in the power grid and in the engineering profession as a whole: the harsh environment.

The trip ended with a peek into the active control and the operators who work around the clock to ensure we have a steady supply of 230V at 50.0Hz.

# Power Electronics/Industrial Electronics/Industry Applications Societies



**Mahinda Vilathgamua**  
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## Committee:

Chair: Mahinda Vilathgamua  
 Vice Chair: Junwei Lu  
 Treasurer: Mohammadhossein Etesami  
 Secretary: Seyyed Ali Pourmousavi Kani

Queensland IAS/IES/PELS joint chapter successfully organized several seminars alongside co-sponsoring monthly QUT PECT seminars in 2018.

A presentation on “Grid Integration of Electric Vehicles” was delivered by our first distinguished speaker, Prof Udaya K. Madawala, from the University of Auckland, New Zealand at QUT Gardens Point Campus on 13 February 2018. Udaya is a Fellow of the IEEE and a Distinguished Lecturer of the IEEE Power Electronic Society. He presented an overview of his current research, followed by a discussion on the trends and latest advances in grid integration of EVs. The focus of the seminar was on bi-directional Wireless Power Transfer (BD-WPT) technology for V2G applications. We had about 20 attendees for this event.

In September, we hosted Dr Hesam Marzooghi from the University of Central Queensland (CQUniversity). He delivered a speech on “The Impact of Renewable Energy Sources and Prosumers on Performance and Stability of Future Power Systems”. In the first part of his presentation, he focused on the CSIRO Future Grid project exploring potential scenarios for Australia’s energy future. Afterwards, he elaborated on Massive InteGRATion of power Electronic (MIGRATE) project which is under the framework of Horizon 2020 in Europe. He finally presented the recent findings of an Advanced Queensland Project called “Battery and

microgrid management systems”. A total number of 40 participants attended this presentation.

A PECT seminar followed on the topic “Degradation Conscious Li-ion Battery Modelling and Management” on 5 October. Three speeches were delivered by Prof Mahinda Vilathgamuwa, Prof Troy Farrell, and Dr Yang Li from QUT. We had a discussion on the management of modern distribution systems using Li-ion battery electrochemical models followed by systematic approaches to predict the degradation of grid-connected lithium-ion batteries. An audience of 30 people participated in this seminar.

IEEE IAS/IES/PELS joint chapter, also co-sponsored seminars which are hosted and organized by QUT’s Power Engineering Discipline and are being held on the first Friday of the month at 12:00pm in GP-Z-1064 as follows:

1. “Disruptive Innovation & the Future of the Electricity Industry” presented by Dr Timothy MacTaggart from QUT on 2 February.
2. “Delivering Queensland Government’s Energy Plan” presented by Mr Tim Quirey from Queensland Government on 2 March.
3. “Planning for 100% Renewable Energy by 2050” presented by Professor John Barry from QUT on 6 April.
4. “Better Distribution Network Operation through State Estimation” by Prof Gerard

Ledwich, Assoc/Prof Geoff Walker, and Mr Mehdi Shafiei on 4 May.

5. “Consumer Behaviour in the Energy Sector” by Prof Rebekah Russell-Bennett from QUT on 1 June.

6. “High Power Electric Vehicle Charging” by James Kennedy, Engineering Director/ CTO from Tritium on 6 July.

7. “The Future of Utility-scale Solar & Storage” by Ms Inka Heile, Conergy’s lead engineer on the 3 August.

8. “Innovation in Power Transformer Research and Australasian Transformer

Innovation Centre (TIC)” by Dr Shawn Nielsen from QUT and Dr Daniel Martin from UQ on 7 September.

9. “New Options for Supplying AC Electrical Railway Networks” by Mr Igor Perin from Aurizon, Brisbane on 2 November.

We will be privileged to host Prof Paolo Mattavelli from University of Padova in December as our second distinguished lecturer.

# Power and Energy & Dielectric and Electrical Insulation Societies



**Tapan Saha**  
[saha@itee.uq.edu.au](mailto:saha@itee.uq.edu.au)

## Committee:

Chair: Tapan Saha  
 Vice Chair: Nilesh Modi  
 Secretary: Mohammadhossein Etesami  
 Treasurer: David Batterham

IEEE PES-DEIS Joint Chapter of Queensland had another productive 2018 with many activities.

Our major activities were as below:

### 1. A day in the life of a Power System Controller:

Speaker: Monique Meerkotter, AEMO  
 Date: 17 April 2018.

Thirty-five members and non-members of IEEE PES attended the event.



*Monique Meerkotter & Marcus Jiang from AEMO with PES-DEIS Chapter Chair Tapan Saha*

### 2. Renewable Electricity Sources

Speakers: from industry and academia.  
 Date: 23 May 2018 - 01:00 pm to 05:00 pm

This was a joint event between EA Electrical Branch, EESA, IET and IEEE. Among others, Prof Tapan Saha & Dr Ruifeng Yan from the IEEE PES QLD Chapter were speakers in this event. The event was a great success with more than 100 participants. The event took place on 23 May at Engineers Australia

Hawken Auditorium. 122 members and non-members of IEEE attended the event.

### 3. IEEE PES Travel award for Students to attend PES GM 2018

IEEE Queensland Section PES/DEIS joint Chapter announced the 2018 IEEE Power & Energy Society (PES) Queensland Chapter Conference Travel Prize for attending IEEE PES GM 2018 in Portland, Oregon, USA, held during 5 August 2018 to 9 August 2018. This year's winners are Junhyuck Seo and Huajie Gu. Both are undertaking PhD studies at the University of Queensland. They received \$2,000 to cover part of their expenditures for attending the conference.

### 4. Power Transformer Tap Changers-Design, Maintenance & Retrofit: Continuing Professional Development Course;

Sponsored by IEEE Queensland PES-DEIS Joint Chapter.

2 Day CPD Advanced Course, 27–28 June 2018; at The University of Queensland, St. Lucia Campus Brisbane

The course was delivered by: Dr. Thomas Smolka (Reinhausen Australia), Rob Milledge (ABB Australia), Dr. Wenyu Guo (OMICRON), Dr. Hui Ma (UQ), Dr. Dan Russell (Energy Queensland), Mike Elms (Western Power), Ross Kempnich (Essential Energy), Ray Holzheimer (TIC).

IEEE Members were given a 5% discount for non-Australasian Transformer Innovation Centre (TIC) Members and 2% for the TIC Members.

**5. Whole of Australian National Electricity Market assessment of economic levels of transmission interconnection, intermittent generation and energy storage capacity**

Speaker: Dr Ian Rose  
Date: 19 June 2018

Dr Ian Ross from Ernst & Young presented a seminar on “Whole of Australian National Electricity Market assessment of economic levels of transmission interconnection, intermittent generation and energy storage capacity” on 19 June 2018 at The University of Queensland. This seminar was attended by 35+ engineers. Dr Ian Rose also received IEEE PES Queensland Chapter Outstanding Engineer Award for 2017 in this function.



*Attendance of the event*

**6. Doppler Lidar technology for atmospheric and environmental observations:**

Ms Fadoua ABOUBI from Leosphere in Paris, France presented a seminar on 28 June 2018 at the University of Queensland. 16 Members & non-members attended the event.

**7. Climate Services in Support of the Energy Transformation**

Speaker: Alberto Troccoli (WEMC);  
Date: Tuesday, 28th August 2018  
Prof. Alberto Troccoli is a visiting Professor at the University of East Anglia’s School of Environmental Sciences and Managing Director of the World Energy & Meteorology Council. He has worked at several leading institutions such as NASA, ECMWF (UK), the

University of Reading (UK) and CSIRO (Australia). 16 Members & non-members attended the event.

**8. Annual Manufacturing Seminar: Distribution Switchgear Evolution: Deploying synchro-phasors in Medium Voltage Reclosers;**

Date: 12 September 2018 - 06:00 pm to 08:00 pm; Venue: Hawken Auditorium Level 1, 447 Upper Edward Street, Brisbane, Members: EA, IET, IEEE members free.

This was a joint event between EA, IEEE and IET. Mehdi Mosadeghy, Project Manager and Martin van der Linde, Global Marketing Manager – NOJA Power provided insights into synchro-phasors and use of it for medium voltage network.

**9. Benefits of using voltage regulating distribution transformers for grid integration of renewables– Lessons learned from first installations in Australia and New Zealand.**

Speaker: Dr. Thomas Smolka, Reinhausen Australia.  
Date: 2 October 2018

IEEE PES Students celebrated IEEE Day after the seminar event.

**10. Reimagining Asset Management with Data Science & Cognitive Systems.**

Speaker: Glen Garner  
Date: 25 September 2018 at University of Queensland

Glen is a Senior Managing Consultant - resident in Brisbane, Australia. He is engaged with many power distribution companies and water utilities globally, optimising Work & Asset Management, and designing Smart Energy and Water Grids.

**11. IEEE PES-DEIS submitted a bid for IEEE PES ISGT 2020 Asia conference to be held in Brisbane. We are now waiting for the outcome.**

# Power & Energy Society (PES) Conference Travel Prize 1



Junhyuck Seo  
Research Student  
The University of Queensland

The conference hosted by IEEE PES group was held at Oregon Convention Centre, Portland, OR, 5-9 August 2018. The theme of the meeting is: *Re-Imagining the Electric Grid*. The conference dealt with all aspects of power engineering in the AC and DC world, changing generation of power system assets and their impacts, challenges in asset management, future economics of power systems, industry regulations and much more.



This conference boasts it is the largest scale meeting among conferences dedicated to the power energy system. It attracts hundreds of researchers and engineers from around the world. The conference demonstrates excellence in providing the latest issues and technical information from academia and power industry. Networking opportunities were great, as was the opportunity to learn from experienced experts. I was particularly interested in sessions on “high voltage system testing techniques” and “asset management” since they are part of my

current research area (transformer condition monitoring and diagnosis). I had an invaluable time to discuss my current research with such experts. Their comments and advice towards my particular dilemmas and projects gave me a good understanding and a good way to explore new thinking.

In addition to the programs the conference provided, establishing a network with research students in other areas was a very valuable experience. During a poster session, I met many people from industry as well as academia. Some of the industry people showed a high interest on my current project and we exchanged useful information for the technology I am developing. During the conference, I attended numerous sessions related to my current projects and future power industry topics.

I was very pleased with the conference attendance and felt it was well worth participating. I had an invaluable experience throughout the conference and with the people I met. The conference was very organized, and the speakers remained neutral, making the information extremely valuable.

Finally, I want to express my sincere gratitude to IEEE PES Queensland Section for supporting me to participate in the conference. The financial support benefited me greatly. I hope the scholarship continues to support other research students to obtain such value from the conference.

## Power & Energy Society (PES) Conference Travel Prize 2

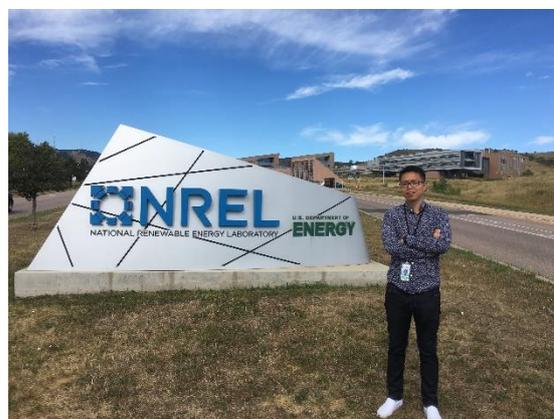


Huajie Gu  
PhD student in Electrical Engineering  
PES group, ITEE, University of Queensland

I would like to express my sincere gratitude to IEEE PES Queensland Chapter for partially funding my US trip. With this travel prize, I was able to attend IEEE PES General Meeting 2018 in Portland, USA, where I presented the journal paper “*Minimum Synchronous Inertia Requirement of Renewable Power Systems*”. This award also partially supported my visit to the National Renewable Energy Laboratory (NREL) in Denver and Auburn University in Auburn from July to August in 2018.

This award provided me the chance to go overseas and build up my network, which does greatly benefit me personally and professionally. During the journey to the US, I gave three presentations about UQ and my research to different researchers in NREL, IEEE PES General meeting and Auburn University, respectively. I took these invaluable opportunities to strengthen my presentation and professional skills. Research practices in NREL also gave me an opportunity to polish up my problem solving, oral communication and interpersonal skills. Furthermore, the NREL visit gave me first-hand experience about how world-leading

research facility functions and what are their current major research topics. NREL is a good place to get nourished with all kinds of knowledge related to renewable energy.



My confidence regarding career development is also substantially boosted after this eye-opening experience. In particular, I now have academic and industrial links. I will no longer feel unsettled and incompetent, as I have had the experience to communicate with the best minds.

# Signal Processing/Communications Societies



**Greg Hislop**  
[gregory.hislop@gmail.com](mailto:gregory.hislop@gmail.com)

## Committee:

Chair: Greg Hislop  
Vice Chair: Muhammad Mohtasim Sajjad  
Secretary: Vacant

## Recent Events

This last month we have held two events, firstly our regular journal club attracted 10 people interested in the subject of algorithms for DNA sequencing. Dr Manuel Schmidt from F B Rice led the discussion and did a wonderful job of explaining the work.

Our second event was kindly organised by our vice chair Dr Mohtasim Sajjad from QUT. He organised a lecture delivered by Dr Ernest Foo also of QUT and entitled "*Recent advances in industrial control systems security*". Around 15 people attended which is good considering it was a Friday afternoon lecture. All enjoyed themselves and the presentation was very informative.

## Events held this year

We have been very active this year with 13 events organised during the year.

Ten of these events have been our monthly journal club meeting where a volunteer picks

a quality journal paper, we all read it and discuss it over drinks/dinner. These are technical meetings in a social atmosphere with good networking opportunities. Indeed, our regulars include representatives from around ten different Brisbane based companies plus the CSIRO and a few lecturers/Professors from UQ and QUT. We endeavour to continue this monthly tradition in 2019 and very much look forward to welcoming old hands and new faces alike.

While the journal club is our mainstay event, we have had two technical lectures and are very interested in holding more in 2019. Our last event for the year is a social gathering on the first Tuesday of December for dinner. It's likely to be held at the Brisbane German Club from 6pm, but the details will be announced shortly. As per usual all are welcome!

I'd like to thank Dr Mohtasim Sajjad for being the Vice Chair this year and say that we look forward to organising a lot of interesting events in 2019.

# Society on Social Implications of Technology



Kieran Tranter  
[K.Tranter@griffith.edu.au](mailto:K.Tranter@griffith.edu.au)

## Committee:

Chair:	Kieran Tranter
Vice Chair:	Michael Guihot
Secretary:	Morgan Broman
Treasurer:	Vacant

SSIT Australia has undertaken a variety of activities and events from November 2017 to November 2018. This has included public talks in Queensland, New South Wales and Victoria, two-day long workshops and a detailed submission to a public inquiry.

## Public talks/panels

1. Ronald Arkin presented '*Robots that Need to Mislead: Biologically - Inspired Machine Deception*' co-hosted with Queensland University of Technology and EMC on 19 April. There were 43 attendees. Professor Arkin explained his research on biological inspired machine deception as a way of humanising the machine-human interface. He urged the audience to take a proactive stance towards the ethics and limits of action for robots and AI systems.
2. '*Naked in the infosphere*' panel (David Watts, Michael Brand, Greg Adamsom, Luke Heemsbergen, Bridget Bainbridge, chaired by James Horton) co-hosted with the University of Melbourne, Network Society Institute, and Datanomics on 16 May with 80 attendees.
3. Tiberio Caetano presented '*Ethics for the 21st Century*' co-hosted with the UNSW Sydney Grand Challenges on 22 August, 27 attendees. This introduced the idea of a "science" of ethics through which the likely impact of alternative actions could be quantified and explored some of the definitional and philosophical questions along the way. The session was lively,

with good audience questions, with some threads of discussion continuing well after the event itself.

## Workshops

1. 14 September *Technology and Human Rights Workshop* – co-hosted by Griffith University, held at the Ship Inn, Southbank Brisbane

### Participants

- Edward Santow (Australian Human Rights Commissioner)
- Greg Adamson (University of Melbourne)
- Michael Guihot (Queensland University of Technology)
- Adam Ladders (University of Melbourne)
- Marcus Wigan (University of Melbourne and the Australian Computer Society)
- Kimberly Fraser (Human Rights lawyer)
- Monica Whitty (University of Melbourne)
- Andre Oboler (LaTrobe University)
- Daniel Eghbal (University of Queensland)
- Samuli Haataja (Griffith University)
- Sue Harris-Rimmer (Law Futures Centre)

- Bridget Lewis (Queensland University of Technology)
- Kieran Tranter (Griffith University)
- Morgan Broman (Griffith University)

The workshop was held in response to the Australian Human Rights Commission inquiry into Human Rights and Technology and involved a day long discussion of the practical and intellectual aspects of thinking about technological change through the lens of human rights. Notes of the discussion were taken by Commission staff and became the basis of written submission to the inquiry.

2. 11 October 2018 IEEE Workshop: *Ethics and AI in a Disability Context*, Sydney, NSW

This workshop held in conjunction with the House with No Steps sought to learn about a specific application of A.I. in the home, where the home itself becomes sentient, aware of what is happening inside of it, and can communicate and collaborate with its inhabitants to

monitor their wellbeing and support decision-making in daily life.

#### *Participants*

- Rick Noble, former NDIS CEO
- Bruce Bonyhady, University of Melbourne
- Nikesh Lalchandani, Commonwealth Bank
- Mac Walker, TMK
- Teresa Anderson, University of Technology
- Hussein Abbas, Australian Disability Federation
- Greg Adamson, SSIT
- John Lewis, SSIT
- Andrew Clark, Monash University.
- Felicity Nelson, House with No Steps

#### **Submissions**

Submission to the Australian Human Rights Commission *Human Rights and Technology Inquiry* 30 September 2018.

Kieran Tranter, Chair SSIT Australia

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## Young Professionals



**Rob Makaremi**  
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### Committee:

Chair: Rob Makaremi  
Vice Chair: Nazanin Nadian  
Secretary: Rueben Peterkin  
Treasurer: Hamid Moghadam

Young Professionals Affinity welcomed Nazanin Nadian as our new vice chair this year. Like previous years, we continued our activities with the main goal of increasing IEEE membership, and improving the value received by our members, in particular for Young Professionals.

Our main event this year was “*Engineers Australia Chartered 2017+*”, where our guest speaker Kathryn Barwick who is a Client Manager at Engineers Australia discussed benefits of the charter program for young professionals as well as the recent changes to the program. Other highlights of this year included YP committee along with IEEE QLD committee attending Engineers Australia Electrical Fraternity Annual Dinner and Awards. This was great chance for us to maintain our relationship with other engineering entities in Queensland, such as the ITEE College, QLD Chapter of EESA, and

IET. I also had the privilege of attending the International Conference on Radar 2018, where Marie-Luise Wille (from WIE) and I moderated a panel of radar experts, on how to encourage women and young professionals to pursue a career in radar and related areas.

Young Professional Affinity committee look forward to next year and hope to deliver value to our members. We would like to extend our gratitude to IEEE Queensland Section for their support throughout previous years.

Please stay in touch with us on [Facebook](#) to be notified of our upcoming events. We look forward to seeing you at our future events in 2019.

I hope that you all have a Merry Christmas and a Happy Holidays.

# Griffith Gold Coast Student Report



**Carl Kleinschmidt**  
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## Committee:

Chair: Carl Kleinschmidt  
 Vice Chair: Jade Newing  
 Secretary: Vacant  
 Treasurer: Georgia Nicholson

## Events and Activities

### IEEE Electric Vehicle Project

The IEEE Student Branch have teamed up with the Griffith Racing Team, to assist them in implementing an electric race car. This is an exciting opportunity for our members to collaborate on ideas, gain experience, and push the bounds of emerging technologies.



### Technical Workshop

Big thank you to Dr Stephen So for running our LaTeX coding workshop. This workshop provides the perfect foundation for those wishing to produce top quality report using



LaTeX, and Dr So is more than happy to help the LaTeX veterans with any challenges.

### Holey Moley Social Night

A few holes of mini golf at Holey Moley, was the ideal way to wind down at the end of the year. Great for the newer members to get to know the old hats and meet some likeminded individuals from other years and disciplines.



### Substation Site Visit

Thank you to Powerlink Queensland for taking students on a guided tour of their Mudgeeraba substation. This visit was a

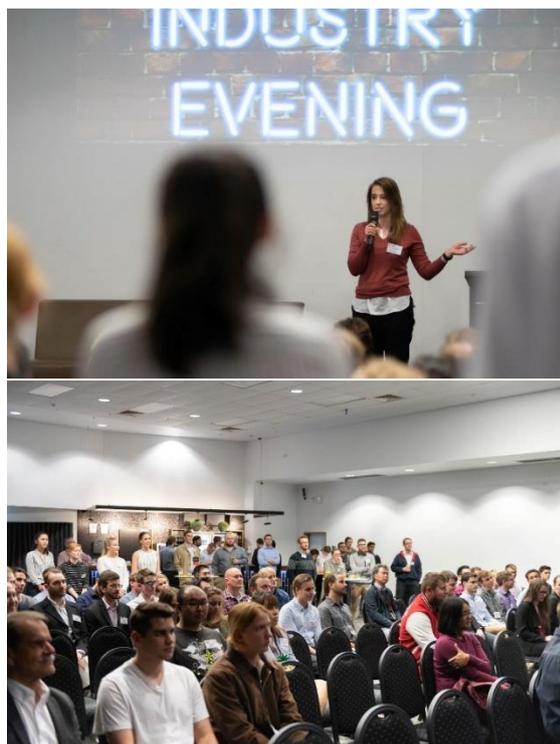


great opportunity to become familiar with industrial environments and to get practical knowledge of electrical power transmission and distribution systems. Powerlink engineers were on site to answer all the students' questions.

#### IEEE Know Your Industry Networking Night

The annual Know Your Industry Night was a great success. This is an opportunity for

industry representatives to connect with the upcoming graduates and for students to get an insight into life as an engineer, all the while supporting a more inclusive industry. Industry professionals are encouraged to attend, have a drink and mingle with undergraduate students. This year we co-hosted the event with Griffith University's Women in Engineering, a very successful collaboration which we hope to repeat.



# QUT Student Report



**Nima Khoshsiraf**  
[khoshsiraf@ieee.org](mailto:khoshsiraf@ieee.org)

## Committee:

Chair: Nima Khoshsiraf  
 Vice Chair: Mohsen Khorasany  
 Secretary: Mac Akmal Jahan  
 Treasurer: Chandrama Sarker

## Follow us on



## IEEE QUT student Branch activities

- 1- New executive committee members have been elected and introduced to the Queensland section in March 2018. The new committee had their first meeting in the last week of March to discuss their 2018 plan. Accordingly, it was decided to organize one non-technical and at least three technical talks in June through September timeframe.
- 2- “**IEEE membership drive**” was organized by the QUT student branch and Queensland section membership development officer. Dr Sudrashan Dahal gave a presentation about the IEEE membership, its benefits and opportunities. Mr Nima Khoshsiraf, chairman of the QUT student branch also gave a report about QUT student branch activities last year and their plan for this year. The goal of this event was to increase awareness about IEEE activities and membership benefits among students and to increase student membership.



- 3- **Smart fault detection for low voltage distribution systems**” seminar by Mr. Mehdi Shfieei was held on 15 June 2018. Mehdi is an associate lecturer and a researcher at Queensland University of Technology. His research project is mainly focused on power system monitoring, estimation and modelling, fault location and identification and dynamic studies in power grids. Before joining QUT, he was a senior protection engineer at FPMC, worked on almost 70 protection relays and relay test units. He also was tasked with relay settings calculation, fault analysis, power system modelling in Power Factory, testing and configuring protection relays. In this seminar he presented a case study in which the performance of the Kalman filter and quantile regression as fault detection

frameworks is evaluated by real distribution networks and customer data.



- 4- A non-technical talk was held on 16 August 2018. In this event Dr. Paige Hilditch-Maguire, Director of QUT Graduate Research Education and Development talked about “**the importance of interpersonal and networking skills for career development**”. This event goal was to help early career researchers and PhD students to leverage their interpersonal and networking skills in their career development.



- 5- A technical talk was held on 21 September 2018. In this event Mr Nima Khoshsirat, a Photovoltaic Engineer and the IEEE QUT student branch chair talked about “**Building Integrated Photovoltaic systems, progresses and prospects**”. The role of BIPV system in energy production and buildings energy management and BIPV systems standards, rules and regulations were reviewed at this event.



# UQ Student Report



**Blake Alexander**  
[blake.alexander@uqconnect.edu.au](mailto:blake.alexander@uqconnect.edu.au)

## Committee:

Chair: Blake Alexander  
 Vice Chair: Sean Lin  
 Secretary: Vishy Datla  
 Treasurer: Vacant

It has been another successful year for the UQ IEEE Student Branch, thanks to the ongoing support of our members, and the Queensland IEEE branch. I am delighted by what we have been able to achieve together this year.

The first event of the year was a MATLAB workshop that we conducted together with the UQ PES branch. The goal of this event was to help research students and undergraduates learn some of the advanced functionality of MATLAB and discuss tips and tricks that make using MATLAB easier. Through this event, we recruited six new members while also raising awareness of the activities of the IEEE within the student community.

This winter, we invited our members to tell us what they would like to see from the branch and what matters most to them via an online survey. Overwhelmingly, the members wanted more events related to employability and networking. In response to this, we collaborated with UQ EBESS and UQCS to host the “High Frequency Networking Evening” on 18 September.

The attendees had an opportunity to network with a diverse range of electrical and software companies over light refreshments. The event itself was very successful with over 60 students attending. In addition, we had representatives from 14 companies including Whitehaven Coal, Origin, Hatch, Boeing, Cochlear and Noja Power. It was a

great event for providing networking opportunities for UQ IEEE student members, as well as for reaching out to the student community about the activities of the IEEE.



*Representatives from Hatch*



*Students learning about Noja Power from Martin van der Linde, Global Marketing Manager*

The feedback from both the industry partners and students was overwhelmingly positive. We have been able to build relationships with new industry and university partners through this event and hope to leverage this to organize similar employability events in the future.



*Attendees talking to Jackson Richards, Senior Manager at Polymathian.*

Our sincere thanks go out to our advisor, Dr Chandima Ekanayake, and UQ PES Chair, Ebby Thomas. We are incredibly grateful for the advice and support that you have provided throughout the year. Finally, we would like to thank all our fantastic members for their continued support and we look forward to another successful year

# UQ PES Student Report



**Ebby Thomas (UQ PES Chair)**  
[e.thomas@uq.edu.au](mailto:e.thomas@uq.edu.au)

## UQ PES Student Committee:

Chair: Ebby Thomas

Vice Chair: Sameera Samarasinghe

Secretary: Vacant

We maintained the spirit of PES (Power and Energy Society) over the last year, 2018. We are happy to inform you about the new ventures from PES, such as collaborative initiatives within the university as well as with other international PES Student branches. We are exploring further IEEE avenues to expand our horizons such as SIGHT (Special Interest Group on Humanitarian Technology). Our PES is already connected with the PES Student chapters of other universities across the world through the *Network Without Borders* (NwB) initiative. Moreover, PES will have active participation as well as volunteering support for the upcoming Women in Leadership Summit (WLS) that is being held at Brisbane on 26-27 November. We also expect to have at least two participants for the Queensland AGM on the 28 November.

## Activities:

In 2018, the IEEE UQ PES organised four independent events, and supported many other events. Among the most notable ones are the WLS Brisbane, Interview drive from Griffith University and more.

## Activities Organised:

1. **The IEEE PES Day:** We celebrated the 10<sup>th</sup> anniversary of the name change to the present Power and Energy Society. On this occasion, we brainstormed how the UQ PES branch could improve - taking inspiration from PES branches worldwide.



*The PES Day celebration*

2. **IEEE Membership Drive:** On the 27 April, the UQ PES together with the IEEE UQ Student branch organised a kick-off event together with a membership drive. Dr. Sudarshan Dahal, the Membership Development Coordinator attended the event as well to address the new members. We received seven new student members for IEEE as well as for the PES during the event.



IEEE Membership Drive

3. **The IEEE day celebration:** on 2 October, we celebrated the IEEE day together with the two other student chapters in UQ – The IEEE Student branch and the IEEE Mu Kappa (Eta Kappa Nu) chapter. Dr. Daniel Eghbal, the Section chair addressed the participants. There were some prizes that were given away during the event for answering questions regarding the IEEE.



IEEE Day celebration

4. **PES – EBESS Student Tutoring Session:**

On 30 October, as a part of engaging with the undergraduates, the PES student branch organised an exam preparatory tutoring session in order to provide one-to-one assistance for the students with their concerns regarding one of the subjects in the university, ELEC 2004. Many students found the session very useful.



Exam preparatory tutoring session

5. **Visit to 3rd PES Student Congress:**

As the chair of PES, UQ, I received an opportunity to attend the Third PES Student congress at Sao Paulo, Brazil, 24–27 August. The congress was a vibrant experience and a chance to network without borders. In future, we would like to incorporate the ideas that were transferred during the event.



At Sao Paulo, 3rd PES Student Congress

**Future Plan:**

PES is focused on further pushing its borders in engagement with the students and attracting them towards us. For this objective, next year we do have some new ideas and plans to organise workshops, competitions as well as fund raising barbecue events. We are excited to welcome the New Year with cross-border relations with other PES chapters and hope this would help us keep updated and the spirit of the students high.