Salman Durrani

Professor, School of Engineering (SOEN), CECS, The Australian National University (ANU), Australia

HIGHLIGHTS

APPOINTMENTS & QUALIFICATIONS

1. Professor, SOEN, CECS, ANU since Jan. 2023.
2. PhD in Electrical Engineering (Telecommunications), University of Queensland, Brisbane, Australia, 2004.
3. Senior Member of Institute of Electrical and Electronics Engineers (IEEE), USA since 2010.
4. Member of Engineers Australia, since 2008.

RESEARCH

1. 164 publications including 1 edited book, 2 book chapters, 69 journal papers and 92 conference papers (including 6 invited papers).
2. h-index =33, +5700 Google Scholar citations (+3400 citations in last five years). 12 publications with 36 citing patents.
3. Chief Investigator (CI) in 6 research grants, total value awarded = $1.9 million (including lead CI in 2 ARC Discovery grants).
4. 2016 IEEE Communications Society (ComSoc) Asia Pacific Outstanding Paper Award.
5. Recognized as AI 2000 Internet of Things (IoT) Most Influential Scholars Honorable Mention in 2023, 2022 and 2020.
6. Editor, IEEE Transactions on Communications, 2015 - 2020.
7. Collaborations and joint publications with researchers from Canada (Queen's Univ. & Carleton Univ.), USA (Boise State Univ.), Europe (Aalborg Univ., Univ. College London, CentraleSupelec and Univ. of Luxembourg) and Asia Pacific (Univ. of Hong Kong and Victoria Univ. of Wellington).

SUPERVISION

1. Supervision of 96 students including 4 Postdoctoral Research Fellows, 14 PhD students (10 graduated), 6 ME Hons students, 29 BE R&D students and 43 BE Hons students.
2. External examiner for 32 PhD and 4 MPhil theses (Australia, Canada, India, Pakistan).
3. 2019 Special Commendation in the Australian Council of Graduate Research (ACGR) Award for Excellence in Graduate Research Supervision.
4. 2018 ANU Vice Chancellor's Award for Supervision Excellence.

EDUCATION

1. Recognised at the grade of Senior Fellow of Higher Education Academy (SFHEA), UK in 2013. I was one of the first 10 ANU academics, and the first in CECS, to achieve this esteem measure.
2. Reviewer for the Go8 Quality Verification System (QVS) 2017 for the discipline of 'Electrical and Electronic Engineering and Technology' in 2018.
3. Discipline Chair, Electronics and Communications Systems major in the Bachelor of Engineering, ANU (2005-2016).
4. 21 invited talks/workshops on teaching.
5. 2012 ANU Vice Chancellor's Award for Teaching Excellence.
6. Graduate Certificate in Higher Education, ANU, 2007.
7. Electric Circuits channel on YouTube since June 2020 (98 videos, +1700 subscribers, +205K views, +9000 watch hours, +400 comments).

SERVICE

1. Associate Director Education, School of Engineering, 2021-present.
2. Member, ANU Appeals Panel, 2018-2021.
3. Backup Chair, ANU Excellence Research Australia (ERA) Panel 10 (Technology), 2014.
4. Member, ANU Vice Chancellor's Awards for Excellence in Education Committee, 2013-2014 and 2019.
5. Chair of the ACT Chapter of the IEEE Signal Processing and Communications Societies in 2015-2016.
6. Finance Chair of 2017 (17th) Australian Communications Theory Workshop.
7. 15 media stories and generating publicity for research, education and student achievements since 2014.

Academic Qualifications

2001—2004 **PhD in Electrical Engineering**
- Institution: School of Information Technology & Electrical Engineering (ITEE), The University of Queensland (UQ), Brisbane, QLD 4072, Australia.
- Thesis: *Investigations into Smart Antennas for CDMA Wireless Systems*.
- Supervisor: Prof. Marek E. Bialkowski (1951-2011).

1996—2000 **B.Sc. (1st class Honours) in Electrical Engineering**
- Institution: Department of Electrical Engineering, The University of Engineering & Technology, Lahore, Pakistan.
- Thesis: *Fractal Image Compression and its Implementation.*
- Supervisor: Assoc. Prof. Masood Ahmed (1959-2007).

2005—2007 **Graduate Certificate in Higher Education**
- Institution: Centre for Educational Development and Academic Methods (CEDAM), The Australian National University (ANU), Canberra, ACT 2601, Australia.

Appointments

Jan. 2023 — present **Professor**
School of Engineering, The Australian National University.

Jan. 2021 — present **Associate Director Education**
School of Engineering, The Australian National University.

Jan. 2018 — Dec. 2022 **Associate Professor**
School of Engineering, The Australian National University.

Jan. 2012 — Dec. 2017 **Senior Lecturer**
Research School of Engineering, The Australian National University.

Mar. 2005 — Dec. 2011 **Lecturer**
Research School of Engineering, The Australian National University.

Oct. 2005 — Apr. 2006 **Visiting Researcher**
Wireless Signal Processing Program, National ICT Australia, Canberra.

Sep. 2004 — Feb. 2005, 2003, 2001 **Research Assistant**
School of Information Technology & Electrical Engineering, The University of Queensland, Brisbane.

Mar. 2001 — Aug. 2004 **PhD Research Student**
School of ITEE, The University of Queensland, Brisbane.

Memberships

2018 – present	**Member** Australasian Association for Engineering Education.
2010 – present	**Senior Member** Institute of Electrical & Electronics Engineers (IEEE), USA.
2008 – present	**Member** Institution of Engineers Australia.
2004 – present	**Member** IEEE Communications Society, IEEE Signal Processing Society, IEEE Vehicular Technology Society.

Awards for Research & Scholarship

2023 Recognized as AI 2000 Internet of Things (IoT) **Most Influential Scholars Honorable Mention** (ranked 67nd in Internet of Things (IoT) over the past 10 years (2013–2022)).

2022 Recognized as AI 2000 Internet of Things (IoT) **Most Influential Scholars Honorable Mention** (ranked 46th in Internet of Things (IoT) over the past 10 years (2012–2021)).

2020 Recognized as AI 2000 Internet of Things (IoT) **Most Influential Scholars Honorable Mention** (ranked 42nd in Internet of Things (IoT) over the past 10 years (2009–2019)).

2019 *Special Commendation* in the **ACGR Award for Excellence in Graduate Research Supervision**.

2019 **ISI Highly Cited Paper** – My publication [J19, c.f. p19] enough citations to place it in the top 1% of the academic field of Computer Science based on a highly cited threshold for the field and publication year.

2019 **ISI Highly Cited Paper** – My publication [J26, c.f. p18] enough citations to place it in the top 1% of the academic field of Computer Science based on a highly cited threshold for the field and publication year.

2018 **ANU Vice-Chancellor's Award for Supervision Excellence**.

2017 **Dean's Awards for Excellence in Supervision**, CECS, ANU.

2016 Paper awarded **2016 IEEE ComSoc AP Outstanding Paper Award**.

2015 Paper awarded **runner up prize in the IEEE Australia Council Student Paper Contest - undergraduate student category**.

2015 *Nominated* for **Dean's Awards for Excellence in Supervision**, College of Engineering & Computer Science, ANU.

2014 Paper selected as one of **Best 50 papers at IEEE Globecom 2014** (corresponds to the top 2% of all papers submitted to IEEE Globecom 2014).

2010 Elevated to grade of **Senior Member, IEEE**.

2007 **Travel Grant**, ARC Australian Communications Research Network (ACoRN), $2000.

2003 **Highly Commended Student Presentation Award**, Eighth Australian Symposium on Antennas, CSIRO Telecommunications & Industrial Physics Centre, Sydney, Australia (one first prize and two highly commended student prizes were awarded).

2001 **Richard Jago Memorial Prize**, The University of Queensland (Co-recipient of the one travel grant/year awarded by School of ITEE, UQ, to attend a conference).

2001−2004 **International Postgraduate Research Scholarship**, funded by the Australian government.

2001−2004 **School of ITEE International Scholarship**, The University of Queensland.

2000 **University Gold Medal** for best graduate of the 1996−2000 session.

2000	**Two Gold Medals from Alumni**: – Shahid-ul-Haq Qureshi Medal for overall best performance in Electronics & Communication subjects in the B.Sc. Electrical Engineering Examination. – Dr. S. H. Durrani Medal for overall best performance in Communication Discipline in the Final Year B.Sc. Electrical Engineering Examination.
2000	**Three Gold Medals from Industry** (Siemens Medal, Nespak Medal, Newage Medal) for overall best performance in the Final Year B.Sc. Electrical Engineering Examination.
2000	**Merit Certificate** for obtaining 1st position in Final year B.Sc. Electrical Engineering.
1999	**Merit Certificate** for obtaining 1st position in Third year B.Sc. Electrical Engineering.
1998	**Merit Certificate** for obtaining 1st position in Second year B.Sc. Electrical Engineering.
1997	**Merit Certificate** for obtaining 1st position in First year B.Sc. Electrical Engineering.
1996–2000	**Merit Scholarship**, Board of Intermediate & Secondary Education, Lahore, Pakistan.

Awards for Teaching

2021 *Commendation* from ANU Deputy Vice Chancellor Academic (DVC-A) for achieving over 90% SELT satisfaction for a course (ENGN1218 Introduction to Electronics) with over 100 enrolments in S2, 2020.

2018 *Nominated* for ANU Distinguished Educator.

2017 Inaugural **Research School of Engineering Education Team Award** (co-recipient with Assoc. Prof. S. Kalyanasundaram), *for outstanding achievements in improving the student experience of ENGN2217 Mechanical Systems and Design* course.

2013 Recognised at the grade of **Senior Fellow of Higher Education Academy (SFHEA), UK**.

2013 **Vox pops competition winner (one of 10), The Higher Education Technology Agenda (THETA) Conference, Hobart, Australia**.

2012 **ANU Vice-Chancellor's Award for Teaching Excellence**.

2014 *Nominated* for The Australian Office for Learning and Teaching (OLT) Citation for Outstanding Contributions to Student Learning.

2014 *Nominated* by students for the ANU Last Lecture.

2012 *Nominated* for OLT Award for Teaching Excellence — Physical Sciences and Related Studies category.

2011 **ANU Commendation for Outstanding Contribution to Student Learning**.

2011 **Dean's Awards for Excellence in Teaching**, CECS, ANU.

2008 **ANU Students' Associations Award for Excellence in Teaching**.

2007 **Dean's Awards for Excellence in Teaching**, CECS, ANU.

2008 *Nominated* for Australian Learning and Teaching Council (ALTC) Award for Teaching Excellence — Early Career category.

2007 *Nominated* for ANU Vice-Chancellor's Award for Teaching Excellence.

2007 *Nominated* by students for the ANU Last Lecture.

AWARDS FOR SERVICE

2021 **Certificate of Appreciation** for Significant Contributions made in furthering the objectives of the society as IEEE Transactions on Communications Editor | 2015-2020.

2018 **Certificate of Appreciation** for Notable Services and Contributions towards the advancement of IEEE and the Engineering Professions.

2017 **Certificate of Appreciation** as Chapter Chair for achieving IEEE Signal Processing Society's Chapter Certification for the ACT Joint Chapter of the IEEE Signal Processing and Communications Societies.

2015 Citation for **extensive individual contributions in 2014 as College Champion** (ANU Educational Fellowship Scheme (EFS) News - Issue no. 11 - January/February 2015; among only one of four EFS members across ANU).

2005 **Certificate of Appreciation** for continued support in College outreach activities, CECS, ANU.

RESEARCH

Grants

Note: BC = book chapter, J= journal paper, C = conference paper and cont. = contribution.

Project Id	CI/PI/ Name/s	Amount Funded	Amount of Years	Project Title	Publication Outputs
DP230100878	N. Yang, **S. Durrani**, X. Zhou, J. Jornet, M. Juntti	$450,000	2023-2026	Ultra-Fast and Secure Terahertz Communications for 6G Wireless Systems	
ANU-Optus Bushfire Research Centre of Excellence, Project 3	X. Zhou, **S. Durrani**, S. A. Alvi	$340,180	2022-2024	Ground-Based Low-Power IoT Sensor Networks for Bushfire Detection and Situational Awareness	Project commencing in July 2022
Data61 Top-Up Scholarship	**S. Durrani**	$27,000	2021	Machine Learning for Internet of Health Things	**Total = 2** (2J (1 submitted, 1 draft). **My cont.: 2** (2J).
DP170100939	**S. Durrani**, X. Zhou, D. T. Ngo, H. Yanikomeroglu	$352,000	2017-2019	Enabling Ultra-Reliable and Sustainable Machine-to-Machine Communications	**Total = 38** (18J + 20C). **My cont.: 26** (14J + 25C).
DP140101133	**S. Durrani**, X. Zhou, H. Mehrpouyan, S. D. Blostein	$365,000	2014-2016	Realizable Synchronization Techniques: Unlocking the Potential of Future Wireless Networks	**Total = 28** (1BC+12J+15C). **My cont.: 24** (1 BC+10J+13C).
DP150101011	R. A. Kennedy, **S. Durrani**, J. D. McEwen	$424,300	2015-2017	Harnessing Spherical Geometry in Scientific and Engineering Data Processing	**Total = 20** (8J + 12C). **My cont.: 2** (1J + 1C). Mentoring of PhD students.

Citation Summary

Total publications:	164
Total citations:	5771(Google Scholar)
h-index:	33
i10-index:	79

Publication Summary

	Accepted							Under review or Draft
	Total	2018	2019	2020	2021	2022	2023	
Books	1	-	-	-	-	-	-	-
Book chapters	2	-	-	-	-	-	-	-
Journal papers	69	7	5	4	2	4	3	4
Conference papers	92	4	1	4	2	3	1	1
Total	164	11	6	8	4	7	4	5

Highly Cited Journal Papers

Note: Data for top highly cited papers for the respective journals in their publication years is obtained using Google Scholar and Publish or Perish (updated: June 2022).

No.	Paper	Year	Journal	Rank
1	[J19]	2013	IEEE Transactions on Wireless Communications	Top 0.35%
2	[J26]	2015	IEEE Transactions on Communications	Top 2%
3	[J35]	2016	EURASIP Journal on Wireless Communications and Networking	Top 2%
4	[J54]	2019	EURASIP Journal on Wireless Communications and Networking	Top 4%
5	[J6]	2006	Microwave and Optical Technology Letters	Top 6%
6	[J37]	2016	IEEE Transactions on Communications	Top 7%
7	[J32]	2016	IEEE Transactions on Wireless Communications	Top 8%
8	[J22]	2014	IEEE Transactions on Communications	Top 11%
9	[J4]	2004	IEEE Transactions on Antennas and Propagation	Top 12%
10	[J49]	2018	IEEE Transactions on Wireless Communications	Top 13%
11	[J29]	2015	IEEE Wireless Communications Letters	Top 15%
12	[J17]	2013	IEEE Transactions on Vehicular Technology	Top 15%

Quality of Journal Papers

Title	Impact factor	Accepted	
		Total	Since Jan. 2018
IEEE Journal on Selected Areas in Communications	16.4	1	1
IEEE Internet of Things Journal	10.6	4	4
IEEE Transactions on Wireless Communications	10.4	11	4
IEEE Transactions on Communications	8.3	14	5
IEEE Open Journal of the Communications Society	7.9	1	1
IEEE Transactions on Vehicular Technology	6.8	6	2
IEEE Transactions on Signal Processing	5.4	6	-
IEEE Transactions on Antennas and Propagation	3.5	1	-
IEEE Wireless Communications Letter	6.3	5	1
IEEE Access	3.9	3	3
IEEE Signal Processing Letters	3.9	1	-
IEEE Communications Letter	4.1	2	-
IEE Electronics Letters	1.202	1	-
IET Communications	1.345	2	-
Elsevier Physical Communication	2.379	1	-
EURASIP Journal on Wireless Communications and Networking	2.559	2	1
EURASIP Journal on Advances in Signal Processing	1.759	2	2
Journal of Communications and Networks	3.908	1	-
Microwave and Optical Technology Letters	1.311	2	-
Mathematica Journal	0.229	1	-
Mathematical Methods in Applied Sciences	3.007	1	1
Other	-	1	-
Total		69	25

Papers Selected in IEEE COMSOC Best Readings

Best Readings is a collection of books, articles, and papers on a featured topic. Selection of a paper in Best Readings signifies that the paper is an archival technical paper or is among the state of the art papers in the field.

No.	Paper	Year	Topic
1	[J63]	2022	Best Readings in Terahertz Communications: These selected Best Readings provide a current look at the state of the art in the field of Terahertz Communications.

Popular Journal Papers in IEEE Xplore

Below are some of my popular articles, based on download statistics in IEEE Xplore:

No.	Paper	Year	Journal	Peak Position
1	[J40]	2017	IEEE Transactions on Wireless Communications	No. 19 in Jan. 2017
2	[J34]	2016	IEEE Transactions on Wireless Communications	No. 8 in Aug. 2016
3	[J32]	2016	IEEE Transactions on Wireless Communications	No. 17 in Jan. 2016
4	[J30]	2015	IEEE Wireless Communications Letters	No. 9 in Sep. 2015
5	[J29]	2016	IEEE Wireless Communications Letters	No. 7 in May 2015
6	[J26]	2014	IEEE Transactions on Communications	No. 19 in May 2015
7	[J24]	2014	IEEE Transactions on Communications	No. 29 in Sep. 2014
8	[J19]	2013	IEEE Transactions on Wireless Communications	No. 11 in Oct. 2013

Papers Cited by Patents

The following data is collected from `https://www.lens.org/`.

- 12 of my publications have been cited by 36 patents. The citing patents are from researchers in Asia Pacific and Middle East and industry companies such as Samsung, Intel, Nokia, LG Electronics, NTT Docomo, Blackberry, Huawei and Fraunhofer.
- My work in Wireless energy harvesting and wireless power transfer has been cited by 20 patents, including patents from Nokia (EP3861801A1) and LG (US10111024B2). In addition, around 20 patents (not necessarily citing our papers) designed extended versions of the original relaying protocols proposed by us. For example, the patent application that directly implements an advanced version of our protocols: `https://patents.google.com/patent/WO2020069761A1` (Nokia) which has also been filed in Europe (EP3861801A1) and China (CN112840710A).

No.	Paper	Year	No. of Citing Patents	Topic
1	[J19]	2013	14	Wireless energy harvesting and wireless power transfer
2	[J26]	2015	1	
3	[C46]	2014	5	
4	[J4]	2004	3	Antenna mutual coupling
5	[J17]	2013	2	Distance distributions
6	[J37]	2016	2	Device-to-device communications
7	[J55]	2019	1	UAV communications
8	[J43]	2017	1	Wireless receiver design
9	[C41]	2013	1	Biomedical signal processing
10	[C30]	2011	2	Synchronization
10	[C25]	2010	2	
12	[C24]	2010	3	

International Collaborators

Note: J= journal paper, C = conference paper, DP = Discovery project, CI = chief investigator in research grant and PI = partner investigator in research grant.

No.	Name	Active Years	Affiliation	Joint Output	Comment
1	**Prof. D. Niyato**	2020-2021	Nanyang Technological University, Singapore	1J+1C	
2	**Prof. H. Yanikomeroglu**	2015-2019	Carleton University, Ottawa, Canada	5J + 4C	PI in DP17
3	**Prof. S. Blostein**	2012-2017	Queen's University, Kingston, Canada	6J + 5C	PI in DP14
4	**Asst. Prof. H. Mehrpouyan**	2012-2018	Boise State University, USA	7J + 5C	PI in DP14
5	**Prof. P. Popovski**	2015-2018	Aalborg University, Denmark	2J + 1C	
6	**Prof. D. I. Kim**	2016	Sungkyunkwan University, South Korea	1J + 1C	
7	**Prof. B. Ottersten**	2013	University of Luxembourg, Luxembourg	2J	
8	**Dr. J. McEwen**	2013-2016	University College London, London, UK	2J	PI in DP15
9	**Dr. P. Dmochowski**	2016	Victoria University of Wellington, New Zealand	1J	Visited ANU in 2015
10	**Prof. I. Kirkidis**	2015	University of Cyprus, Nicosia	1J	
11	**Prof. M. Di Renzo**	2017	CentraleSupelec, Univ. Paris-Sud, France	1J	Visited ANU in 2016
12	**Prof. Kaibin Huang**	2017	University of Hong Kong, Hong Kong	2J + 1C	Hosted my PhD student in 2016

Domestic Collaborators

No.	Name	Active Years	Affiliation	Joint Outputs	Comment
1	**Assoc. Prof. Y. Hong**	2021	Monash University, Melbourne	1J + 1C	
2	**Dr Seyit Camtepe**	2021-present	CSIRO Sydney	1J	
3	**Dr. M. Ding**	2019-2020	CSIRO, Sydney	1J + 1C	
4	**Dr. D. T. Ngo**	2015-2020	University of Newcastle, Newcastle	5J + 7C	CI in DP17
5	**Prof. T. D. Hoang**	2015	University of Technology, Sydney	1J + 1C	

ANU Collaborators

I have meaningfully collaborated with ANU collaborators, as evidenced below.

No.	Name	Active Years	Joint Outputs	Comment	1st or 2nd Author in Joint Outputs
1	**Dr. X. (Sean) Zhou**	2013-present	32J + 34C	CI in DP14 and DP17	Salman=40%, Sean=50%
2	**Dr. N. Yang**	2015-present	3J + 5C		Salman =50%, Nan =50%
3	**Prof. R. Kennedy**	2009-2016	14J + 24C	CI in DP15	Salman=42%, Rod=16%
4	**Assoc. Prof. P. Sadeghi**	2009-2016	9J + 13C		Salman=41%, Parastoo=22%

International Researchers Hosted at ANU

1. **Prof. E. Hossain**, University of Manitoba, Winnipeg, Canada, July 2019.
2. **Prof. H. Yanikomeroglu**, Carleton University, Ottawa, Canada, July 2018.
3. **Assoc. Prof. M. D. Renzo**, Paris-Saclay University, Paris, France, Oct. 2016.
4. **Dr. P. Dmochowski**, Victoria University of Wellington, New Zealand, Jan.-Feb. 2015 and July 2014.
5. **Prof. J. S. Thompson**, The University of Edinburgh, Edinburgh, Scotland, Aug. 2014.
6. **Prof. V. Krishnamurthy**, University of British Columbia, Vancouver, Canada, Nov. 2012.
7. **Assoc. Prof. B. Petersen**, University of New Brunswick, New Brunswick, Canada, Aug. 2012.
8. **Dr. R. Schoenen**, Carleton University, Ottawa, Canada, Nov. 2011.
9. **Prof. N. M. Sheikh**, University of Engineering & Technology, Lahore, Pakistan, Sep. 2010.

Invited Talks and Seminars

Invited Talks

1. **Invited talk**, *Design of Non-orthogonal Multiple Access Enhanced Backscatter Communication*, Australian Communications Theory Workshop (AusCTW), Newcastle, Feb. 2018.
2. **Invited talk**, *Distance Distributions and Boundary Effects in Finite Uniformly Random Networks*, Australian Communications Theory Workshop (AusCTW), Adelaide, Feb. 2013.

Seminars (International and National)

1. **Seminar**, *Energy Harvesting for Wireless Sensor Networks: Myth or Reality?*, School of Electrical Engineering and Computing Seminar, The Univ. of Newcastle, NSW, Apr. 2016.
2. **Seminar**, *Distance Distributions in a Square Region*, Department of Electrical & Computer Engineering Seminar, Queen's University, Kingston, Canada, Sep. 2012.
3. **Seminar**, *Blind Timing and Carrier Synchronization in Decode and Forward Cooperative Systems*, Statistical Signal Processing Laboratory Seminar, The University of British Columbia, Sep. 2010.
4. **Seminar**, *Blind Timing and Carrier Synchronization in Decode and Forward Cooperative Systems*, BCWS Seminar Series, Carleton University, Ottawa, Canada, Sep. 2010.
5. **Seminar**, *Performance of sensor arrays for wireless CDMA systems*, Workshop on Sensor Networks, The University of Technology, Sydney, Australia, Nov. 2004.
6. **Seminar**, *Analysis of the error performance of adaptive array antennas for CDMA with noncoherent M-ary orthogonal modulation in Nakagami fading*, The University of Queensland, Oct. 2004.

Seminars (at ANU)

1. **Seminar**, *Energy Harvesting for Wireless Sensor Networks: Myth or Reality?*, Communications Seminar, ANU, Apr. 2016.
2. **Seminar**, *Distance Distributions and Border Effects in a Unit Square*, ASP Seminar Series, ANU, May 2012.
3. **Seminar**, *Analysing Connectivity of Wireless Ad hoc Networks with Beamforming*, RSISE, ANU, June 2009.
4. **Seminar**, *Parametric Channel Modelling for Wireless Systems*, RSISE, ANU, May 2008.
5. **Seminar**, *Channel Modelling for Beamforming in Cellular Systems*, Department of Engineering Research Forum, ANU, June 2006.

Selected Seminars (in Pakistan)

1. **Seminar**, *Machine-Type Communication with Random Access and Data Aggregation: A Stochastic Geometry Approach*, Department of Electrical Engineering, National University of Computer and Emerging Sciences, Lahore, Jan. 2018.

2. **Seminar**, *Distance Distributions and Boundary Effects in Finite Uniformly Random Networks*, The University of Engineering & Technology, Lahore, Pakistan, Jan. 2014.

3. **Seminar**, *Blind Timing and Carrier Synchronization in Decode and Forward Cooperative Systems*, Lahore University of Management Science, Pakistan, Nov., 2010.

4. **Seminar**, *Connectivity of Wireless Ad hoc Networks*, Workshop on Wireless Communications, The University of Engineering & Technology, Lahore, Pakistan, Dec. 2009. Also presented at Lahore University of Management Science, Pakistan, Dec, 2009.

   Seminar, *Design Guidelines for Training-based MIMO Systems with Feedback*, The University of Engineering & Technology, Lahore, Pakistan, Dec. 2008.

5. **Seminar**, *Smart Antennas for Wireless Communications*, The University of Engineering & Technology, Lahore, Pakistan, Jan. 2006.

6. **Seminar**, *Smart Antenna Applications for CDMA Wireless Systems*, The University of Engineering & Technology, Lahore, Pakistan, Dec. 2003.

Paper Presentations

1. **Paper Presentation (electronic)** at IEEE ICC, Dublin, Ireland, June 2020.

2. **Paper Presentation** at IEEE Globecom, Singapore, Dec. 2017.

3. **Paper Presentation** at IEEE VTC, Sydney, Australia, June 2017.

4. **Paper Presentations** at IEEE ICC, London, UK, June 2015.

5. **Paper Presentations** at IEEE ICT, Sydney, Apr. 2015.

6. **Paper Presentation (electronic)** at IEEE ICC, Kyoto, Japan, June 2011.

7. **Paper Presentation** at IEEE PIMRC, Athens, Greece, Sep. 2007.

8. **Paper Presentation** at IEEE VTC, Melbourne, Australia, May 2006.

9. **Paper Presentation** at IEEE ISSTA, Sydney, Australia, Sep. 2004.

10. **Paper Presentation** at 8th Australian Symposium on Antennas, CSIRO Industrial Physics Centre, Sydney, Feb. 2003.

Book

[B1] D. N. K. Jayakody, J. Thompson, S. Chatzinotas and **S. Durrani** (editors), "*Wireless Information and Power Transfer: A New Paradigm for Green Communications*," Springer International Publishing AG, July 2017. `http://www.springer.com/gp/book/9783319566689`.

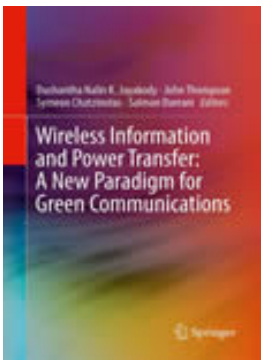


Figure 1: Book front photo (+12,000 chapter downloads as of 23-5-2022)

Book Chapters

[BC2] W. Liu, **S. Durrani** and X. Zhou, "Wireless Powered Sensor Networks," In D. N. K. Jayakody, J. Thompson, S. Chatzinotas and **S. Durrani**, editors, *Wireless Information and Power Transfer: A New Paradigm for Green Communications*, Springer International Publishing AG, July 2017.

[BC1] **S. Durrani** and M. E. Bialkowski, "Smart Antennas for Code Division Multiple Access Systems," In C. Sun, J. Cheng and T. Ohira, editors, *Handbook on Advancements in Smart Antenna Technologies for Wireless Networks*, Information Science Reference, July 2009.

Refereed Journal Papers

[J73] J. Guo, **S. Durrani**, X. Zhou, Z. Fei and H. Yanikomeroglu, "Design and Performance Analysis of Cache-Enabled Multicast in UAV-Enhanced Cellular Networks," *submitted to IEEE Transactions on Communications*, Aug. 2023.

[J72] S. Idrees, **S. Durrani**, Z. Xu, X. Jia and X. Zhou, "Joint Active and Passive Beamforming for IRS-assisted Monostatic Backscatter Systems: An Unsupervised Learning Approach," *submitted to IEEE Transactions on Machine Learning in Communications and Networking*, Aug. 2023.

[J71] N. Senadhira, **S. Durrani**, S. Alvi, N. Yang and X. Zhou, "UAV-assisted IoT Monitoring Network: Adaptive Multiuser Access for Low-Latency and High-Reliability Under Bursty Traffic," *submitted to IEEE Transactions on Wireless Communications*, Apr. 2023.

[J70] S. Khan, C. Thapa, **S. Durrani** and S. Camtepe, "Access-Based Lightweight Physical Layer Authentication for the Internet of Things Devices," *submitted to IEEE Internet of Things Journal*, March, 2023.

[J69] W. Wang, Z. Fei, J. Guo, **S. Durrani** and H. Yanikomeroglu, "Outage Performance of Multi-Tier UAV Communication With Random Beam Misalignment," *IEEE Internet of Things Journal*, 2023 (accepted: 18-7-2023)

[J68] S. Wang, J. Guo, Q. Cui, **S. Durrani**, and H. Yanikomeroglu, "Energy Efficiency Optimization for Multiple Access in NOMA-Enabled Space-Air-Ground Networks," *IEEE Internet of Things Journal*, 2023. (accepted: 4-1-2023)

[J67] S. Khan, **S. Durrani**, M. B. Shahab, S. J. Johnson and S. Camtepe, "Joint User and Data Detection in Grant-Free NOMA With Attention-Based BiLSTM Network," *IEEE Open Journal of the Communications Society*, vol. 4, pp. 1499–1515, 2023.

[J66] S. Alvi, Y. Hong and **S. Durrani**, "Federated Learning Cost Disparity for IoT Devices," *IEEE Internet of Things Journal*, vol. 9, no. 19, pp. 19398–19413, Oct., 2022.

[J65] S. Idrees., X. Jia, **S. Durrani** and X. Zhou, "Design of Intelligent Reflecting Surface (IRS) - boosted Ambient Backscatter Systems," *IEEE Access*, vol. 10, pp. 65000–65010, June 2022.

[J64] R. Pure, **S. Durrani**, F. Tong and J. Pan, "Distance Distribution Between Two Random Nodes in Arbitrary Polygons," *Mathematical Methods in Applied Sciences*, vol. 45, no. 5, pp. 2760-2775, March 2022.

[J63] A. Shafie, N. Yang, S. Alvi, C. Han, **S. Durrani** and J. M. Jornet, "Spectrum Allocation with Adaptive Subband Bandwidth for Terahertz Communication Systems," *IEEE Transactions on Communications*, vol. 70, no. 2, pp. 1407–1422, Feb. 2022.

[J62] A. Shafie, N. Yang, **S. Durrani**, X. Zhou, C. Han and M. Juntti, "Coverage Analysis for 3D Terahertz Communication Systems," *IEEE Journal on Selected Areas in Communications - Special Issue on THz Communications and Networking*, vol. 39, no. 6, pp. 1817–1832, June 2021.

[J61] R. Saleem, S. Alvi and **S. Durrani**, ""Performance-Fairness Trade-off for Wi-Fi and LTE-LAA Coexistence," *IEEE Access*, vol. 9, pp. 62446–62459, Apr. 2021.

[J60] S. Idrees, X. Zhou, **S. Durrani** and D. Niyato, "Design of Ambient Backscatter Training for Retrodirective Wireless Power Transfer," *IEEE Transactions on Wireless Communications*, vol 19, no. 10, pp. 6316–6330, Oct. 2020.

[J59] N. Senadhira, **S. Durrani**, X. Zhou, N. Yang and M. Ding, "Uplink NOMA for Cellular-Connected UAV: Impact of UAV Trajectories and Altitude," *IEEE Transactions on Communications*, vol. 68, no. 8, pp. 5242– 5258, Aug. 2020.

[J58] S. Alvi, X. Zhou, **S. Durrani** and D. T. Ngo, "Sequencing and Scheduling for Multi-User Machine-Type Communication," *IEEE Transactions on Communications*, vol. 68, no. 4, pp. 2459–2473, Apr. 2020.

[J57] Xiaohui Zhou, **S. Durrani** and J. Guo, "Drone-Assisted Multihop Multicast Device-to-Device Networks for Emergency Information Dissemination," *IEEE Access*, vol. 8, pp. 3566–3578, Jan. 2020.

[J56] J. Guo, **S. Durrani** and X. Zhou, "Monostatic Backscatter System with Multi-Tag to Reader Communication," *IEEE Transactions on Vehicular Technology*, vol. 68, no. 10, pp. 10320–10324, Oct. 2019.

[J55] Xiaohui Zhou, **S. Durrani**, J. Guo and H. Yanikomeroglu, "Underlay Drone Cell for Temporary Events: Impact of Drone Height and Aerial Channel Environments," *IEEE Internet of Things Journal Special Issue on Unmanned Aerial Vehicles Over Internet of Things*, vol. 6, no. 2, pp. 1704–1718, Apr. 2019.

[J54] W. Liu, K. Huang, X. Zhou and **S. Durrani**, "Next Generation Backscatter Communication: Systems, Techniques and Applications, *EURASIP Journal on Wireless Communications and Networking*, 2019:69, 18 March 2019.

[J53] A. Koohian, H. Mehrpouyan, A. A. Nasir and **S. Durrani**, "Joint Channel and Phase Noise Estimation for mmWave Full-Duplex Communication Systems," *EURASIP Journal on Advances in Signal Processing*, 2019:18, 15 March 2019.

[J52] J. Guo, X. Zhou and **S. Durrani**, "Wireless Power Transfer via mmWave Power Beacons with Directional Beamforming," *IEEE Wireless Communications Letters*, vol. 8, no. 1, pp. 17–20, Feb. 2019.

[J51] T. T. Vu, D. T. Ngo, M. N. Dao, **S. Durrani**, D. H. N. Nguyen and R. H. Middleton, "Spectral and Energy Efficiency Maximization for Content-Centric C-RANs with Edge Caching," *IEEE Transactions on Communications*, vol. 66, no. 12, pp. 6628–6642, Dec. 2018.

[J50] S. Alvi, X. Zhou and **S. Durrani**, "Optimal Compression and Transmission Rate Control for Node-Lifetime Maximization," *IEEE Transactions on Wireless Communications*, vol. 17, no. 11, pp. 7774–7788, Nov. 2018.

[J49] J. Guo, X. Zhou, **S. Durrani** and H. Yanikomeroglu, "Design of Non-orthogonal Multiple Access Enhanced Backscatter Communication," *IEEE Transactions on Wireless Communications*, vol. 10, no. 8, pp. 6837–6852, Oct. 2018.

[J48] T. T. Vu, D. T. Ngo, M. N. Dao, **S. Durrani**, D. H. N. Nguyen and R. H. Middleton, "Energy-Efficiency Maximization for Downlink Cloud Radio Access Networks with Data Sharing and Data Compression," *IEEE Transactions on Wireless Communications*, vol. 17, no. 8, pp. 4955–4970, Aug. 2018.

[J47] S. Alvi, **S. Durrani** and X. Zhou, "Enhancing CRDSA with Transmit Power Diversity for Machine-Type Communication," *IEEE Transactions on Vehicular Technology*, vol. 67, no. 8, pp. 7790–7794, Aug. 2018.

[J46] Xiaohui Zhou, J. Guo, **S. Durrani** and M. D. Renzo, "Power Beacon-Assisted Millimeter Wave Ad Hoc Networks," *IEEE Transactions on Communications*, vol. 66, no. 2, pp. 830–844, Feb. 2018.

[J45] A. Koohian, H. Mehrpouyan, A. A. Nasir, **S. Durrani**, M. Azarbad and S. D. Blostein, "Superimposed Signaling Inspired Channel Estimation in Full-Duplex Systems," *EURASIP Journal on Advances in Signal Processing*, Jan. 2018.

[J44] J. Guo, **S. Durrani**, X. Zhou and H. Yanikomeroglu, "Massive Machine Type Communication with Data Aggregation and Resource Scheduling," *IEEE Transactions on Communications*, vol. 65, no. 9, pp. 4012–4026, Sep. 2017.

[J43] W. Liu, X. Zhou, **S. Durrani** and P. Popovski, "A Novel Receiver Design with Joint Coherent and Non-Coherent Processing," *IEEE Transactions on Communications*, vol. 65, no. 8, pp. 3479–3493, Aug. 2017.

[J42] W. Liu, K. Huang, X. Zhou and **S. Durrani**, "Full-Duplex Backscatter Interference Networks Based on Time-Hopping Spread Spectrum," *IEEE Transactions on Wireless Communications*, vol. 16, no. 7, pp. 4361–4377, July 2017.

[J41] Y. Huang, **S. Durrani**, P. Dmochowski and X. Zhou, "A Proposed Network Balance Index for Heterogeneous Networks," *IEEE Wireless Communications Letters*, vol. 6, no. 1, pp. 98–101, Feb. 2017.

[J40] J. Guo, **S. Durrani**, X. Zhou and H. Yanikomeroglu, "Device-to-Device Communication Underlaying a Finite Cellular Network Region," *IEEE Transactions on Wireless Communications*, vol. 16, no. 1, pp. 332–347, Jan. 2017.

[J39] S. N. Islam, **S. Durrani** and P. Sadeghi, "SER Analysis of Lattice Coded Multi-way Relay Networks in the Presence of Imperfect Channel Estimation," *Journal of Communications and Networks*, vol. 18, no. 5, pp. 677–687, Oct. 2016.

[J38] A. A. Nasir, H. D. Tuan, D. T. Ngo, D. I. Kim and **S. Durrani**, "Path-Following Algorithms for Beamforming and Signal Splitting in RF Energy Harvesting Networks," *IEEE Communications Letters*, vol. 20, no. 8, pp. 1687–1690, Aug. 2016.

[J37] Y. Huang, A. A. Nasir, **S. Durrani** and X. Zhou, "Mode Selection, Resource Allocation and Power Control for D2D-Enabled Two-Tier Cellular Network," *IEEE Transactions on Communications*, vol. 64, no. 8, pp. 3534–3547, Aug. 2016.

[J36] A. A. Nasir, D. T. Ngo, X. Zhou, R. A. Kennedy and **S. Durrani**, "Joint Resource Optimization for Heterogeneous Multicell Networks with Wireless Energy Harvesting Relays," *IEEE Transactions on Vehicular Technology*, vol. 65, no. 8, pp. 6168–6183, Aug. 2016.

[J35] A. A. Nasir, **S. Durrani**, H. Mehrpouyan, S. D. Blostein and R. A. Kennedy, "Timing and Carrier Synchronization in Wireless Communication Systems: A Survey and Classification of Research in the Last 5 Years," *EURASIP Journal on Wireless Communications and Networking*, no. 1, pp. 1-38, Aug. 2016.

[J34] W. Liu, X. Zhou, **S. Durrani**, H. Mehrpouyan and S. D. Blostein, "Energy Harvesting Wireless Sensor Networks: Delay Analysis Considering Energy Costs of Sensing and Transmission," *IEEE Transactions on Wireless Communications*, vol. 15, no. 7, pp. 4635–4650, July 2016.

[J33] Z. Khalid, **S. Durrani**, R. A. Kennedy, W. Wiaux and J. D. McEwen, "Gauss-Legendre Sampling on the Rotation Group," *IEEE Signal Processing Letters*, vol. 23, no. 2, pp. 207–211, Feb. 2016.

[J32] W. Liu, X. Zhou, **S. Durrani** and P. Popovski, "Secure Communication with a Wireless-Powered Friendly Jammer," *IEEE Transactions on Wireless Communications*, vol. 15, no. 1, pp. 401–415, Jan. 2016.

[J31] S. N. Islam, **S. Durrani** and P. Sadeghi, "A Novel User Pairing Scheme for Functional Decode-and-Forward Multi-way Relay Network," *Elsevier Physical Communication*, vol. 17, pp. 128-148, Dec. 2015.

[J30] X. Zhou, J. Guo, **S. Durrani** and I. Krikidis, "Performance of Maximum Ratio Transmission in Ad Hoc networks with Wireless Energy Harvesting," *IEEE Wireless Communications Letters*, vol. 4, no. 5, pp. 529–532, Oct. 2015.

[J29] J. Guo, **S. Durrani**, X. Zhou and H. Yanikomeroglu, "Outage Probability of Ad Hoc Networks with Wireless Information and Power Transfer," *IEEE Wireless Communications Letters*, vol. 4, no. 4, pp. 409–412, Aug. 2015.

[J28] R. Pure and **S. Durrani**, "Computing Exact Closed-Form Distance Distributions in Arbitrarily-Shaped Polygons with Arbitrary Reference Point," *The Mathematica Journal*, vol. 17, June 2015.

[J27] Y. Huang, **S. Durrani** and X. Zhou, "Interference Suppression using Generalized Inverse Precoder for Downlink Heterogeneous Networks," *IEEE Wireless Communications Letters*, vol. 4, no. 3, pp. 325–328, June 2015.

[J26] A. A. Nasir, X. Zhou, **S. Durrani** and R. A. Kennedy, "Wireless-Powered Relays in Cooperative Communications: Time-Switching Relaying Protocols and Throughput Analysis," *IEEE Transactions on Communications*, vol. 63, no. 5, pp. 1607–1622, May 2015.

[J25] J. Guo, **S. Durrani** and X. Zhou, "Performance Analysis of Arbitrarily-Shaped Underlay Cognitive Networks: Effect of Secondary User Activity Protocols," *IEEE Transactions on Communications*, vol. 63, no. 2, pp. 376–389, Feb. 2015.

[J24] O. H. Salim, A. A. Nasir, H. Mehrpouyan, W. Xiang, **S. Durrani** and R. A. Kennedy, "Channel, Phase Noise, and Frequency Offset in OFDM Systems: Joint Estimation, Data Detection, and Hybrid Cramer-Rao Lower Bound," *IEEE Transactions on Communications*, vol. 62, no. 9, pp. 3311–3325, Sep. 2014.

[J23] Z. Khalid, **S. Durrani** and J. Guo, "A Tractable Framework for Exact Probability of Node Isolation and Minimum Node Degree Distribution in Finite Multi-hop Networks," *IEEE Transactions on Vehicular Technology*, vol. 63, no. 6, pp. 2836–2847, July 2014.

[J22] J. Guo, **S. Durrani** and X. Zhou, "Outage Probability in Arbitrarily-Shaped Finite Wireless Networks," *IEEE Transactions on Communications*, vol. 62, no. 2, pp. 699–712, Feb. 2014.

[J21] S. N. Islam, P. Sadeghi and **S. Durrani**, "Error Performance Analysis of AF and DF Multi-way Relay Networks with BPSK Modulation," *IET Communications*, vol. 15, no. 7, pp. 1605–1616, Oct. 2013.

[J20] A. A. Nasir, H. Mehrpouyan, **S. Durrani**, S. Blostein, R. A. Kennedy and B. Ottersten, "Optimal Training Sequences for Joint Timing Synchronization and Channel Estimation in Distributed Communication Networks," *IEEE Transactions on Communications*, vol. 61, no. 7, pp. 3002–3015, July 2013.

[J19] A. A. Nasir, X. Zhou, **S. Durrani** and R. A. Kennedy, "Relaying Protocols for Wireless Energy Harvesting and Information Processing," *IEEE Transactions on Wireless Communications*, vol. 12, no. 7, pp. 3622–3636, July 2013. (**2016 IEEE ComSoc AP Outstanding Paper Award**)

[J18] A. A. Nasir, H. Mehrpouyan, **S. Durrani**, S. D. Blostein, R. A. Kennedy and B. Ottersten, "Transceiver Design for Distributed STBC Based AF Cooperative Networks in the Presence of Timing and Frequency Offsets," *IEEE Transactions on Signal Processing*, vol. 61, no. 12, pp. 3143–3158, June 2013.

[J17] Z. Khalid and **S. Durrani**, "Distance Distributions in Regular Polygons," *IEEE Transactions on Vehicular Technology*, vol. 62, no. 5, pp. 2363–2368, June 2013.

[J16] Z. Khalid, R. A. Kennedy, **S. Durrani**, P. Sadeghi, Y. Wiaux, and J. D. McEwen, "Fast Directional Spatially Localized Spherical Harmonic Transform," *IEEE Transactions on Signal Processing*, vol. 61, no. 9, pp. 2192–2203, May 2013.

[J15] Z. Khalid, P. Sadeghi, R. A. Kennedy and **S. Durrani**, "Spatially Varying Spectral Filtering of Signals on the Unit Sphere," *IEEE Transactions on Signal Processing*, vol. 61, no. 3, pp. 530–544, Feb. 2013.

[J14] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Particle Filters for Joint Timing and Carrier Estimation: Improved Resampling Guidelines and Weighted Bayesian Cramer-Rao Bounds," *IEEE Transactions on Communications*, vol. 60, no. 5, pp. 1407–1419, May 2012.

[J13] Z. Khalid, **S. Durrani**, P. Sadeghi and R. A. Kennedy, "Spatio-spectral Analysis of Signals on the Sphere Using Spatially Localized Spherical Harmonics Transform," *IEEE Transactions on Signal Processing*, vol. 60, no. 3, pp. 1487–1492, March 2012.

[J12] A. Nasir, H. Mehrpouyan, S. Blostein, **S. Durrani** and R. A. Kennedy, "Timing and Carrier Synchronization with Channel Estimation in Multi-Relay Cooperative Networks," *IEEE Transactions on Signal Processing*, vol. 60, no. 2, pp. 793–811, Feb. 2012.

[J11] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Blind Timing and Carrier Synchronization in Distributed MIMO Communication Systems," *IET Communications*, vol. 5, no. 7, pp. 1028–1037, May 2011.

[J10] X. Zhou, T. Lamahewa, P. Sadeghi and **S. Durrani**, "Two-way Training: Optimal Power Allocation for Pilot and Data Transmission," *IEEE Transactions on Wireless Communications*, vol. 9, no. 2, pp. 564–569, March 2010.

[J9] X. Zhou, **S. Durrani** and H. Jones, "Connectivity Analysis of Wireless Ad hoc Networks with Beamforming," *IEEE Transactions on Vehicular Technology*, vol. 58, no. 9, pp. 5247–5257, Nov. 2009.

[J8] X. Zhou, P. Sadeghi, T. Lamahewa and **S. Durrani**, "Design Guidelines for Pilot Transmission in MIMO Systems with Feedback," *IEEE Transactions on Signal Processing*, vol. 57, no. 10, pp. 4014–4026, Oct. 2009.

[J7] X. Zhou, P. Sadeghi, T. Lamahewa and **S. Durrani**, "Optimizing Antenna Configuration for MIMO Systems with Imperfect Channel Estimation," *IEEE Transactions on Wireless Communications*, vol. 8, no. 3, pp. 1177–1181, Mar. 2009.

[J6] M. E. Bialkowski, P. Uthansakul, K. Bialkowski and **S. Durrani**, "Investigating the Performance of MIMO Systems from an Electromagnetic Perspective," *Microwave and Optical Technology Letters*, vol. 48, no. 7, pp. 1233–1238, July 2006.

[J5] **S. Durrani** and M. E. Bialkowski, "Analysis of the error performance of adaptive array antennas for CDMA with noncoherent *M*-ary orthogonal modulation in Nakagami fading," *IEEE Communications Letters*, vol. 9, no. 2, pp. 148–150, Feb. 2005.

[J4] **S. Durrani** and M. E. Bialkowski, "Effect of mutual coupling on the interference rejection capabilities of linear and circular arrays in CDMA systems," *IEEE Transaction on Antennas and Propagation*, vol. 52, no. 4, pp. 1130–1134, Apr. 2004.

[J3] **S. Durrani** and M. E. Bialkowski, "An Investigation into the interference rejection capability of a linear array in a wireless communications system," *Microwave and Optical Technology Letters*, vol. 35, no. 6, pp. 445–449, Dec. 2002.

[J2] **S. Durrani** and M. E. Bialkowski, "Interference rejection capabilities of different types of antenna arrays in cellular systems," *Electronics Letters*, vol. 38, pp. 617–619, June 2002.

[J1] **S. Durrani** and M. Ahmed, "Implementation of Fractal Image Compression in Matlab Environment", *Journal of the Institution of Electrical and Electronics Engineers Pakistan*, vol. XXXVIII, pp. 94–102, Dec. 2000.

Refereed Conference Papers

[C93] S. Khan, C. Thapa, **S. Durrani** and S. Camtepe, "Beyond Key-based Authentication: A Novel Continuous Authentication Paradigm for IoTs," submitted to *Proc. IEEE Global Communications Conference Workshops (GC Workshops)*, Kuala Lumpur, Malaysia, Dec. 2023.

[C92] N. Senadhira, S. A. Alvi, N. Yang, X. Zhou, and **S. Durrani**, "Adaptive Multiuser Access for UAV-assisted IoT Monitoring Networks Under Bursty Traffic," in *Proc. IEEE International Conference on Communications Workshops (ICC Workshops)*, Rome, Italy, May 2023.

[C91] S. Alvi, Y. Hong and **S. Durrani**, "Federated Learning Cost Disparity for IoT Devices," in *Proc. IEEE International Conference on Communications Workshops (ICC Workshops)*, Seoul, South Korea, May 2022.

[C90] X. Li, X. Zhou and **S. Durrani**, "SWIPT-Enabled Cellular-Connected UAV: Energy Harvesting and Data Transmission," in *IEEE International Conference on Communications Workshop (ICC Workshops)*, Seoul, South Korea, May. 2022.

[C89] A. Shafie, N. Yang, S. Alvi, C. Han, **S. Durrani** and J. M. Jornet, "Adaptive Sub-band Bandwidth-Enabled Spectrum Allocation for Terahertz Communication Systems," in *Proc. IEEE International Conference on Communications (ICC)*, Seoul, South Korea, May. 2022.

[C88] S. Idrees, X. Jia, S. Khan, **Salman Durrani** and X. Zhou, "Deep Learning Based Passive Beamforming for IRS-assisted Monostatic Backscatter Systems,"', in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Singapore, May 2022.

[C87] S. Khan, **S. Durrani** and X. Zhou, "Transfer Learning Based Detection for Intelligent Reflecting Surface Aided Communications," in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Sep. 2021.

[C86] A. Shafie, N. Yang, Z. Sun and **S. Durrani**, "Coverage Analysis for 3D Terahertz Communication Systems with Blockage and Directional Antennas," in *Proc. IEEE International Conference on Communications Workshop (ICC Workshops)*, Dublin, Ireland, June 2020.

[C85] N. Senadhira, **S. Durrani**, X. Zhou, N. Yang and M. Ding, "Impact of UAV Trajectory on NOMA-Assisted Cellular-Connected UAV Networks," in *Proc. IEEE International Conference on Communications (ICC)*, Dublin, Ireland, June 2020.

[C84] S. Idrees, X. Zhou, **S. Durrani** and D. Niyato, "A Retrodirective Wireless Power Transfer Scheme for Ambient Backscatter Systems," in *Proc. IEEE International Conference on Communications (ICC)*, Dublin, Ireland, June 2020.

[C83] S. Alvi, X. Zhou, **S. Durrani** and D. T. Ngo, "Proportionally-Fair Sequencing and Scheduling for Machine-Type Communication," in *Proc. IEEE International Conference on Communications (ICC)*, Dublin, Ireland, June 2020.

[C82] S. Alvi, X. Zhou and **S. Durrani**, "Wireless Powered Machine-Type Communication: Energy Minimization via Compressed Transmission," in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Istanbul, Turkey, Sep. 2019.

[C81] S. Alvi, X. Zhou and **S. Durrani**, "A Lifetime Maximization Scheme for a Sensor Based MTC Device," in *Proc. IEEE Global Communications Conference (Globecom)*, Abu Dhabi, United Arab Emirates, Dec. 2018.

[C80] J. Guo, X. Zhou and **S. Durrani**, "Backscatter Communications with NOMA," in *Proc. IEEE International Symposium on Wireless Communication Systems (ISWCS)*, Lisbon, Portugal, Aug. 2018. **(invited paper)**

[C79] Xiaohui Zhou, J. Guo, **S. Durrani** and H. Yanikomeroglu, "Uplink Coverage Performance of an Underlay Drone Cell for Temporary Events," in *Proc. IEEE International Conference on Communications (ICC) Workshop on UAVs in 5G*, Kansas City, May 2018. **(invited paper)**

[C78] T. V. Tung, D. T. Ngo, M. N. Dao, **S. Durrani**, D. H. N. Nguyen and R. Middleton, "Energy-Efficient Design for Downlink Cloud Radio Access Networks," in *Proc. IEEE International Conference on Communications (ICC)*, Kansas City, USA, May 2018.

[C77] W. Liu, K. Huang, X. Zhou and **S. Durrani**, "Time-Hopping Multiple-Access for Backscatter Interference Networks," in *Proc. IEEE IEEE Global Communications Conference (Globecom)*, Singapore, Dec. 2017.

[C76] T. T. Vu, D. T. Ngo, L. Ong, **S. Durrani** and R. H. Middleton, "Joint Optimization of User Association, Data Delivery Rate and Precoding for cache-enabled F-RANs," in *Proc. IEEE Global Communications Conference (Globecom)*, Singapore, Dec. 2017.

[C75] J. Guo, **S. Durrani**, X. Zhou and H. Yanikomeroglu, "Machine-Type Communication with Random Access and Data Aggregation: A Stochastic Geometry Approach," in *Proc. IEEE Global Communications Conference (Globecom)*, Singapore, Dec. 2017.

[C74] J. Lee, J. Guo and **S. Durrani**, "Analytical Framework for Access Class Barring in Machine Type Communication," in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Montreal, Canada, Oct. 2017.

[C73] J. Guo, **S. Durrani**, X. Zhou and H. Yanikomeroglu, "Underlay D2D Communication in a Finite Cellular Network with Exclusion Zone," in *Proc. IEEE Vehicular Technology Conference (VTC-Fall)*, Toronto, Canada, Sep. 2017

[C72] Y. Huang, **S. Durrani** and X. Zhou, "Base Station Preference Association with Network Dynamics," in *Proc. IEEE Vehicular Technology Conference (VTC-Spring)*, Sydney, Australia, June 2017.

[C71] Xiaohui Zhou, J. Guo and **S. Durrani**, "Characterization of Aggregate Received Power from Power Beacons in Millimeter Wave Ad Hoc Networks," in *Proc. IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.

[C70] A. Koohian, H. Mehrpouyan, A. A. Nasir, **S. Durrani** and S. D. Blostein, "Residual Self-interference Cancellation and Data Detection in Full-Duplex Communication Systems," in *Proc. IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.

[C69] Z. Khalid, R. A. Kennedy and **S. Durrani**, "Improving the Spatial Dimensionality of Gauss-Legendre and Equiangular Sampling Schemes on the Sphere," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, New Orleans, USA, March 2017.

[C68] N. Senadhira, J. Guo and **S. Durrani**, "Outage Analysis of Underlaid Multi-Antenna D2D Communication in Cellular Networks," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Australia, Dec. 2016.

[C67] Y. Huang, **S. Durrani**, X. Zhou and N. Yang, "Effects of Load Dependent Dynamic Biasing and Association Order for Cell Range Expansion," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Australia, Dec. 2016.

[C66] W. Liu, X. Zhou, **S. Durrani** and P. Popovski, "SWIPT with Practical Modulation and RF Energy Harvesting Sensitivity," in *Proc. IEEE International Conference on Communication (ICC)*, Kuala Lumpur, Malaysia, May 2016.

[C65] A. A. Nasir, D. T. Ngo, H. D. Tuan, **S. Durrani** and D. I. Kim, "Secure Beamforming for Max-Min SINR in Multi-Cell SWIPT Systems," in *Proc. IEEE WCNC Workshop on Wireless Powered Communication Networks: From Theory to Industrial Challenges (WPCNets)*, Doha, Qatar, Apr. 2016, pp. 404–409.

[C64] A. A. Nasir, H. Mehrpouyan, D. W. Matolak and **S. Durrani**, "Non-Coherent FSK: An Attractive Modulation Set for Millimeter-Wave Communications," in *Proc. IEEE Wireless Communications & Networking Conference (WCNC)*, Doha, Qatar, Apr. 2016.

[C63] Y. Huang, A. A. Nasir, **S. Durrani** and X. Zhou, "Graphical Generalization of Power Control in Multiuser Interference Channels," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Melbourne, Australia, Jan. 2016, pp. 136–140.

[C62] S. N. Islam, **S. Durrani** and P. Sadeghi, "Multi-pair Two-way Relay Networks: Interference Management Using Lattice Codes and Amplify and Compute Relaying," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Melbourne, Australia, Jan. 2016, pp. 1–6.

[C61] W. Liu, X. Zhou, **S. Durrani**, H. Mehrpouyan and S. D. Blostein, "Performance of Wireless-Powered Sensor Transmission Considering Energy Cost of Sensing," in *Proc. IEEE Global Communications Conference (Globecom)*, San Diego, CA, USA, Dec. 2015.

[C60] A. A. Nasir, D. T. Ngo, H. D. Tuan and **S. Durrani**, "Iterative Optimization for Max-Min SINR in Dense Small-Cell Multiuser MISO SWIPT System," in *Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Atlanta, Georgia, USA, Dec. 2015, pp. 1392–1396.

[C59] W. Liu, X. Zhou and **S. Durrani**, "Wireless-Powered Friendly Jammer for Physical Layer Security'," in *Proc. International Conference on Wireless Communications and Signal Processing (WCSP)*, Nanjing, China, Oct. 2015. **(invited paper)**

[C58] Y. Huang, **S. Durrani**, and X. Zhou, "Interference Nulling for Offloaded Heterogeneous Users Using Macro Generalized Inverse Precoder," in *Proc. International Symposium on Communications and Information Technologies (ISCIT)*, Nara, Japan, Oct. 2015.

[C57] D. Marshall, **S. Durrani**, J. Guo and N. Yang, "Performance Comparison of Device-to-Device Mode Selection Schemes," in *Proc. IEEE International Symposium on Personal, Indoor & Mobile Radio Communications (PIMRC)*, Hong Kong, China, Aug. 2015, pp. 1536–1541. (**runner up prize in the IEEE Australia Council 2015 Student Paper Contest - undergraduate student paper category**)

[C56] A. A. Nasir, X. Zhou, **S. Durrani** and R. A. Kennedy, "Block-Wise Time-Switching Energy Harvesting Protocol for Wireless-Powered AF Relays," in *Proc. IEEE International Conference on Communication (ICC)*, London, UK, June 2015, pp. 80–85.

[C55] A. A. Nasir, D. T. Ngo, X. Zhou, R. A. Kennedy and **S. Durrani**, "Sum Throughput Maximization for Heterogeneous Multicell Networks with RF-Powered Relays," in *Proc. IEEE International Conference on Communication (ICC)*, London, UK, June 2015, pp. 2196–2202.

[C54] C. Wang, **S. Durrani**, J. Guo and X. Zhou, "Call Completion Probability in Heterogeneous Networks with Energy Harvesting Base Stations," Proc. International Conference on Telecommunications (ICT), Sydney, Australia, Apr. 2015, pp. 191–197. **(invited paper)**

[C53] A. A. Nasir, D. T. Ngo and **S. Durrani**, "DC Programming for Power Minimization in a Heterogeneous Network with RF-Powered Relays," Proc. International Conference on Telecommunications (ICT), Sydney, Australia, Apr. 2015, pp. 174–179. **(invited paper)**

[C52] S. Islam and **S. Durrani**, "Multi-group Multi-way Relaying with Multi-stage Non-Regenerative Relay Stations," in *Proc. International Conference on Telecommunications (ICT)*, Sydney, Australia, Apr. 2015, pp. 43–47.

[C51] S. Islam, **S. Durrani** and P. Sadeghi, "Optimum Power Allocation for Sum Rate Improvement in AF Multi-way Relay Networks," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Australia, Dec. 15-17, 2014.

[C50] J. Guo, **S. Durrani** and X. Zhou, "Performance Analysis of Arbitrarily-Shaped Underlay Cognitive Networks: Effect of Secondary User Activity Protocols," in *Proc. IEEE Global Communications Conference (Globecom)*, Austin, USA, Dec. 8-12, 2014, pp. 967–972. (**selected as one of Best 50 papers at IEEE Globecom 2014 (corresponds to the top 2.2% of all papers submitted to IEEE Globecom 2014)**).

[C49] Z. Khalid, R. A. Kennedy, **S. Durrani** and P. Sadeghi, "Adaptive Multi-Resolution Windowing Technique for Localized Spatio-Spectral Analysis," in *Proc. IEEE Statistical Signal Processing (SSP)*, Gold Coast, Australia, June-July 2014, pp. 41–44.

[C48] S. N. Islam, P. Sadeghi and **S. Durrani**, "A Novel Pairing Scheme to Reduce Error Propagation in an Amplify and Forward Multi-way Relay Network," in *Proc. IEEE Statistical Signal Processing (SSP)*, Gold Coast, Australia, June-July 2014, pp. 544–547.

[C47] A. A. Nasir, H. Mehrpouyan, **S. Durrani**, S. D. Blostein and R. A. Kennedy, "Training-Based Synchronization and Channel Estimation in AF Two-Way Relaying Networks," *Proc. IEEE Signal Processing Advances in Wireless Communications (SPAWC)*, Toronto, Canada, June 2014, pp. 86–90.

[C46] A. A. Nasir, X. Zhou, **S. Durrani** and R. A. Kennedy, "Throughput and Ergodic capacity of Wireless Energy Harvesting Based DF Relaying Network," in *Proc. IEEE International Conference on Communication (ICC)*, Sydney, Australia, June 2014, pp. 4077–4082.

[C45] D. H. Chae, N. H. Kim, Y. Alem, **S. Durrani** and R. A. Kennedy, "Dynamic Fractional Frequency Reuse Method for Self-Organizing Smallcell Network," in *Proc. 2nd International Workshop on 5G Mobile and Wireless Communication System for 2020 and Beyond (MWC2020'14: VTC2014-Spring Workshop)*, Seoul, South Korea, May, 2014.

[C44] Z. Khalid, R. A. Kennedy and **S. Durrani**, "On the Choice of Window for Spatial Smoothing of Spherical Data," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Florence, Italy, May, 2014, pp. 2663–2667.

[C43] Z. Khalid, R. A. Kennedy, P. Sadeghi and **S. Durrani**, "Spatio-spectral Formulation and Design of Spatially-Varying Filters for Signal Estimation on the 2-Sphere," in *Proc. SPIE Wavelets and Sparsity XV*, San Diego, USA, Sep. 2013, vol. 8858, pp. 88580L-1-88580L-13 (**invited paper**).

[C42] A. A. Nasir, H. Mehrpouyan, **S. Durrani**, S. D. Blostein and R. A. Kennedy "DSTBC based DF Cooperative Networks in the Presence of Timing and Frequency Offsets," in *Proc. IEEE Signal Processing Advances in Wireless Communications (SPAWC)*, Darmstadt, Germany, June 2013.

[C41] D. H. Chae, Y. Alem, **S. Durrani** and R. A. Kennedy, "Performance study of compressive sampling for ECG signal compression in noisy and varying sparsity acquisition," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Vancouver, Canada, May 2013.

[C40] Z. Khalid and **S. Durrani**, "Connectivity of Three Dimensional Wireless Sensor Networks Using Geometrical Probability," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Adelaide, Jan., 2013.

[C39] W. Tushar, J. Zhang, D. B. Smith, H. V. Poor, G. Platt and **S. Durrani**, "An Efficient Energy Curtailment Scheme For Outage Management in Smart Grid," in *Proc. IEEE Global Communications Conference (Globecom)*, California, USA, Dec. 3-7, 2012.

[C38] A. A. Nasir, H. Mehrpouyan, Steven D. Blostein, **S. Durrani**, R. A. Kennedy, "Estimation of Synchronization Parameters in AF Cooperative Networks," in *Proc. IEEE International Conference on Communications (ICC)*, Ottawa, Canada, June 10-15, 2012.

[C37] Z. Khalid, **S. Durrani**, R. A. Kennedy and P. Sadeghi, "Concentration uncertainty principles for signals on the unit sphere," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Kyoto, Japan, Mar. 25-30, 2012.

[C36] Z. Khalid, **S. Durrani**, R. A. Kennedy and P. Sadeghi, "Ambiguity function and Wigner distribution on the sphere," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Kyoto, Japan, Mar. 25-30, 2012.

[C35] Z. Khalid, R. A. Kennedy, **S. Durrani** and P. Sadeghi, "Conjugate gradient algorithm for extrapolation of sampled bandlimited signals on the 2-sphere," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Kyoto, Japan, Mar. 25-30, 2012.

[C34] Z. Khalid, **S. Durrani**, R. A. Kennedy and P. Sadeghi, "Revisiting Slepian Concentration Problem on the Sphere for Azimuthally Non-Symmetric Regions," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Hawaii, USA, Dec. 12-14, 2011.

[C33] A. A. Nasir, **S. Durrani** and R. A. Kennedy , "Achieving Cooperative Diversity with Multiple Frequency Offset Estimation,"bin *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Hawaii, USA, Dec. 12-14, 2011.

[C32] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Blind Timing and Carrier Synchronization in Decode and Forward Cooperative Systems," in *Proc. IEEE International Conference on Communications (ICC)*, Kyoto, Japan, June 5-9, 2011.

[C31] Z. Khalid, **S. Durrani**, P. Sadeghi and R. A. Kennedy, "On the construction of low-pass filters on the unit sphere," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Prague, Czech Republic, May 22-27, 2011.

[C30] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Mixture Kalman Filtering for joint carrier recovery and channel estimation in time-selective Rayleigh fading channels," in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Prague, Czech Republic, May 22-27, 2011.

[C29] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "A Particle Filter for Joint Blind Carrier Frequency Offset Estimation and Data Detection," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Dec. 13-15, 2010.

[C28] O. Hashmi, S. Kodituwakku and **S. Durrani**, "Frequency Prioritised Queuing in Real-Time Electrocardiograph Systems," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Dec. 13-15, 2010.

[C27] **S. Durrani**, X. Zhou, A. Chandra, "Effect of Mobility on Connectivity of Vehicular Ad Hoc Networks," in *Proc. IEEE Vehicular Technology Conference (VTC)*, Ottawa, Canada, 6–9 September, 2010.

[C26] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Blind Fractionally Spaced Equalization and Timing Synchronization in Wireless Fading Channels," in *Proc. 2nd International Conference on Future Computer and Communication (ICFCC)*, vol. 3, Wuhan, China, 21-24 May, 2010, pp. 15–19.

[C25] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Performance of Coarse and Fine Timing Synchronization in OFDM Receivers," in *Proc. 2nd International Conference on Future Computer and Communication (ICFCC)*, vol. 2, Wuhan, China, 21-24 May, 2010. pp. 412–416.

[C24] A. A. Nasir, **S. Durrani** and R. A. Kennedy, "Modified Constant Modulus Algorithm for joint blind equalization and synchronization," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Canberra, Feb. 2-6, 2010.

[C23] X. Zhou, T. Lamahewa, P. Sadeghi and **S. Durrani**, "Optimizing Training-based Transmission for Correlated MIMO systems with Hybrid Feedback," in *Proc. IEEE Global Telecommunications Conference (Globecom)*, Hawaii, USA, Nov 30 - Dec. 4, 2009.

[C22] X. Zhou, **S. Durrani** and H. Jones, "Connectivity of Ad Hoc Networks: Is Fading Good or Bad?," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Dec. 15-17, 2008.

[C21] X. Zhou, T. Lamahewa, P. Sadeghi and **S. Durrani**, "Capacity of MIMO Systems: Impact of Spatial Correlation with Channel Estimation Errors," in *Proc. IEEE International Conference on Communication Systems (ICCS)*, Guangzhou, China, Nov. 19-21, 2008, pp. 817–822.

[C20] **S. Durrani**, X. Zhou and H. Jones, "Connectivity of Wireless Ad Hoc Networks with Random Beamforming: An Analytical Approach," in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Cannes, France, Sep. 15-18, 2008.

[C19] X. Zhou, T. Lamahewa, P. Sadeghi and **S. Durrani**, "Designing PSAM Schemes: How Optimal are SISO Pilot Parameters for Spatially Correlated SIMO?," in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Cannes, France, Sep. 15-18, 2008.

[C18] X. Zhou, **S. Durrani** and H. Jones, "Analytical Study of Connectivity in Wireless Ad hoc Networks with Random Beamforming," in *Proc. International Conference on Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Dec. 17-19, 2007.

[C17] **S. Durrani**, M. E. Bialkowski and S. Latif, "Statistical properties of a parametric channel model for multiple antenna systems," in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Athens, Greece, Sep. 3-7, 2007.

[C16] X. Zhou, H. Jones, **S. Durrani** and A. Scott, "Effect Of Beamforming On The Connectivity Of Ad Hoc Networks," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Adelaide, Feb. 5-7, 2007, pp. 13–18.

[C15] S. Pan, **S. Durrani** and M. E. Bialkowski, "MIMO Capacity for Spatial Channel Model Scenarios," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Adelaide, Feb. 5-7, 2007, pp. 25–29.

[C14] **S. Durrani** and M. E. Bialkowski, "A Parametric Channel Model for Smart Antennas Incorporating Mobile Station Mobility,"in *Proc. IEEE Vehicular Technology Conference (VTC)*, vol. 6, Melbourne, May 7-10, 2006, pp. 2803–2807.

[C13] M. E. Bialkowski, **S. Durrani**, P. Uthansakul, and K. Bialkowski, "A Simple Electromagnetic Model for Understanding the Operation of a MIMO System," in *Proc. IEEE Symposium on Antennas and Propagation (AP-S)*, vol. 2A, Washington, July 3-8, 2005, pp. 305–308.

[C12] P. Uthansakul, M. E. Bialkowski, **S. Durrani**, K. Bialkowski and A. Postula, "Effect of Line of Sight Propagation on Capacity of an Indoor MIMO System," in *Proc. IEEE Symposium on Antennas and Propagation (AP-S)*, vol. 2B, Washington, July 3-8, 2005, pp. 707–710.

[C11] M. E. Bialkowski, **S. Durrani**, K. Bialkowski and P. Uthansakul, "Understanding and analyzing the performance of MIMO systems from the microwave perspective," in *Proc. IEEE International Microwave Symposium (IMS)*, Long Beach, California, June 12-17, 2005, pp. 2251–2254.

[C10] **S. Durrani** and M. E. Bialkowski, "A simple model for performance evaluation of a smart antenna in a CDMA system," in *Proc. IEEE International Symposium on Spread Spectrum Techniques and Applications (ISSSTA)*, Sydney, Australia, Aug. 30 - Sep. 2, 2004, pp. 379–383.

[C9] **S. Durrani** and M. E. Bialkowski, "Performance of hierarchical beamforming in a Rayleigh fading environment with angle spread," in *Proc. International Symposium on Antennas (ISAP)*, vol. 2, Sendai, Japan, Aug. 17-21, 2004, pp. 937–940.

[C8] **S. Durrani** and M. E. Bialkowski, "Effect of angular energy distribution of an incident signal on the spatial fading correlation of a uniform linear array," in *Proc. International Conference on Microwaves, Radar and Wireless Communications (MIKON)*, vol. 2, Warsaw, Poland, May 17-19, 2004, pp. 493–496.

[C7] **S. Durrani** and M. E. Bialkowski, "Performance analysis of beamforming in Ricean fading channels for CDMA systems," in *Proc. Australian Communications Theory Workshop (AusCTW)*, Newcastle, Australia, Feb. 4-6, 2004, pp. 1–5.

[C6] **S. Durrani** and M. E. Bialkowski, "A smart antenna model incorporating an azimuthal dispersion of received signals at the base station of a CDMA system," in *Proc. IEEE International Multi Topic Conference (INMIC)*, Islamabad, Pakistan, Dec. 8-9, 2003, pp. 218–223.

[C5] **S. Durrani** and M. E. Bialkowski, "BER performance of a smart antenna system for IS-95 CDMA," in *Proc. IEEE International Symposium on Antennas and Propagation (AP-S)*, vol. 2, Columbus, Ohio, June 22-27, 2003, pp. 855–858.

[C4] **S. Durrani** and M. E. Bialkowski, "Simulation of the performance of smart antennas in the reverse link of CDMA system," in *Proc. IEEE International Microwave Symposium (IMS)*, vol. 1, Philadelphia, Pennsylvania, June 8-13, 2003, pp. 575–578.

[C3] **S. Durrani**, M. E. Bialkowski and J. Janapsatya, "Effect of mutual coupling on the interference rejection capabilities of a linear array antenna," in *Proc. Asia Pacific Microwave Conference (APMC)*, vol. 2, Kyoto, Japan, Nov. 19-22, 2002, pp. 1095–1098.

[C2] **S. Durrani** and M. E. Bialkowski, "Investigation into the performance of an adaptive array in cellular environment," in *Proc. IEEE International Symposium on Antennas and Propagation (AP-S)*, vol. 2, San Antonio, Texas, June 16-21, 2002, pp. 648–651.

[C1] **S. Durrani** and M. E. Bialkowski, "Development of CDMASIM: a link level simulation software for DS-CDMA systems," in *Proc. 14th International Conference on Microwaves, Radar and Wireless Communications (MIKON)*, Gdansk, Poland, May 20-22, 2002, pp. 861–864.

Supervision Summary

	Total	Completed	In Progress
Postdoc	**4**	3	1
PhD	**14**	10	4
– as primary supervisor	10	7	3
– as supervisor	4	3	1
ME Hons	**6**	6	0
BE Hons	**43**	43	0
BE R&D	**29**	29	0

Postdoc Supervision

No.	Name	Years	Project	Outcomes
4	Dr. Chiu Chan	2022-present	ANU Optus Bushfire Project	
3	Dr. Jing Guo	2017-2019	DP170100939	4J + 4C. A. Prof. at BIT, China
2	Dr. Zubair Khalid	2016	DP150101011	1J+1C. A. Prof. at LUMS, Pakistan
1	Dr. Ali Nasir	2014-2015	DP140101133	5J +8C. Asst. Prof. at KFUPM, Saudi Arabia

PhD Student Awards

1 **ANU Vice-Chancellor's HDR Travel Grant**

No.	Year	Student	Amount	Host	Trip Duration
7	Sheeraz Alvi	2018	$3500/-	Prof. C. Fischione, KTH Royal Institute of Technology, Stockholm, Sweden	2 months
6	Xiaohui Zhou	2017	$1500/-	Assoc. Prof. M. Di Renzo, CentraleSupelec, Univ. Paris-Sud, France	3 weeks
5	Wanchun Liu	2015	$2500/-	Asst. Prof. Kaibin Huang, University of Hong Kong, Hong Kong	3 months
4	Yifei Huang	2015	$1250/-	Prof. J. Andrews, The University of Texas at Austin, USA	2 months
3	Jing Guo	2014	$3000/-	Prof. H. Yanikomeroglu, Carleton University, Ottawa, Canada	4 months
2	Ali Nasir	2011	$3500/-	Prof. T. Svennson and Prof. T. Erikson, Chalmers University of Technology, Sweden	6 months
1	Zubair Khalid	2010	$1500/-	Dr. J. McEwen, University College London, London, UK	3 months

2 **CECS Dean's Travel Grant**

No.	Year	Student	Amount	Host	Trip Duration
3	Sheeraz Alvi	2018	$2500/-	Prof. C. Fischione, KTH Royal Institute of Technology, Stockholm, Sweden	2 months
2	Yifei Huang	2015	$2250/-	Prof. J. Andrews, The University of Texas at Austin, USA	2 months
1	Zubair Khalid	2012		Dr. J. McEwen, University College London, London, UK	3 months

3 **Chinese Government Award for Outstanding Self-Financed Students Abroad (awarded to no more than 500 Chinese students each year all over the world)**: Xiaohui Zhou (2019), Wanchun Liu (2017), Jing Guo (2016)

4 **2016 Australian Information Theory School - Student Travel Grant**: Jing Guo ($500/-) and Xiaohui Zhou ($250/-).

PhD Student Supervision

Note: J= journal paper, C = conference paper, Cont. = contribution.

No.	Name	Thesis	My role	Cont.	Outcomes
14	Mr. Saud Khan (July 2020-present)	*Machine Learning for Wireless Networks*	Primary supervisor and Chair	50%	2J (1 under review, 1 draft) + 1C
13	Mr. Akram Shafie (Jan. 2020-present)	*Terahertz Communications*	Associate supervisor (co-supervised with A. Prof. N. Yang)	20%	2J + 2C
12	Ms. Nilupuli Senadhira (May 2018-present)	*UAV Communications*	Primary supervisor and Chair	50%	3J (1 under review, 1 draft) + 2C
11	Ms. Sahar Idrees (March 2018-present)	*Backscatter Communication*	Primary supervisor and Chair	50%	3J (1 draft) + 2C
10	Mr. Sheeraz A. Alvi (July 2016-present)	*Analysis and Design of Communication Policies for Energy-Constrained Machine-Type Devices*	Associate supervisor (co-supervised with Dr. X. Zhou)	30%	3J + 3C. Educational Lab Developer, ANU
9	Ms. Xiaohui Zhou (March 2015-present)	*Integrating Drones and Wireless Power Transfer into Beyond 5G Networks*	Primary supervisor and Chair (co-supervised with Dr. J. Guo)	70%	3J +2C. Postdoc at Macquarie (Prof. S. Hanly)
8	Mr. Abbas Koohian (May 2015-May 2019)	*Channel Estimation and Self-Interference Cancellation in Full-Duplex Communication Systems*	Primary supervisor and Chair	50%	2J+2C. Westpac Group, Sydney
7	Ms. Wanchun Liu (July 2014-July 2017)	*Wireless Communication Networks Powered by Energy Harvesting*	Associate supervisor and Chair (co-supervised with Dr. X. Zhou)	40%	4J+3C. Postdoc at USYD (with Prof. B. Vucetic)
6	Mr. Yifei Huang (Mar. 2014-May 2017)	*Network management and Decision Making for 5G heterogeneous Networks*	Primary supervisor and Chair (co-supervised with Dr. X. Zhou)	60%	3J+4C. Quantum Brilliance, UK
5	Ms. Jing Guo (Sep. 2012-Apr. 2016)	*Stochastic Geometry for Modeling, Analysis and Design of Future Wireless Networks*	Primary supervisor and Chair (co-supervised with Dr. X. Zhou)	60%	6J+3C. A. Prof., BIT, China
4	Ms. Shama N. Islam (June 2011-Dec. 2014)	*Multi-way Relay Networks: Characterization, Performance Analysis and Transmission Scheme Design*	Associate supervisor (co-supervised with Dr. P. Sadeghi)	40%	3J+4C. Senior Lecturer, Deakin University, Geelong
3	Mr. Zubair Khalid (April 2010-April 2013)	*Spatio-Spectral Analysis on the Unit Sphere*	Primary supervisor (co-supervised with Prof. R. Kennedy and Dr. P. Sadeghi)	35%	5J+5C. A. Prof. at LUMS, Pakistan
2	Mr. Ali A. Nasir (June 2009-Sep. 2012)	*Synchronization in Cooperative Communication Systems*	Primary supervisor (co-supervised with Prof. R. Kennedy)	70%	5J+8C. Asst. Prof. at KFUPM, Saudi Arabia
1	Mr. Xiangyun Zhou (Jan. 2008-June 2010)	*Transmission Resource Allocation in Multi-Antenna Wireless Communication Systems with Channel Uncertainty*	Associate supervisor (co-supervised with Dr. P. Sadeghi)	40%	4J+7C. A. Prof., ANU.

Master of Engineering (ME) Honours Student Supervision

No.	Year	Name	Thesis	Outcome
6	2017	Mr. Farhan Saeed	*Matlab Simulation of Downlink cellular Systems with Elevated Base Stations*	Matlab code
5	2014	Mr. Nie Cong	*Generalized Distance Distributions in Wireless Networks*	Matlab code
4	2011	Ms. Hongfei Jia	*Analyzing the Connectivity of Vehicular Ad Hoc Networks Using SUMO*	
3	2007	Mr. Chao Yu	*Modelling of Mobile-to-Mobile Communication Channels*	
2	2006	Mr. Jing Gu	*Performance of M-ary Orthogonal Signals over Nakagami-m Fading Channels*	
1	2006	Mr. Shuo Pan	*Capacity of MIMO Systems for Spatial Channel Model Scenarios*	1C (cited by 23)

BE R&D Student Supervision

The BE R&D degree is an elite engineering degree that allows undergraduate students to get involved in research based projects during their degree. ENGN4718 = 18 unit (Hons) research project, ENGN4712 = 12 unit (Hons) research project, ENGN3712 = 12 unit research project in 3rd year, ENGN3706 = 6 unit research project in 3rd year, ENGN2707 = 6 unit research project in 2nd year, ENGN2706 = research project worth 40% of introductory 6 unit course in 2nd year.

No.	Year	Course	Name	Thesis	Outcome
29	2023	ENGN2706	Ms. Safiya Bardi	*Statistical Modelling of UAV Wobbling*	
28	2023	ENGN2706	Mr. Arthur Zhao	*Volcano Monitoring Using IoT*	
27	2022	ENGN2706	Mr. TJ Adler	*Power consumption of Bushfire sensors*	
26	2021	ENGN2706	Ms. Darby Liersch	*Identification and Analysis of a Bushfire Simulator Suitable for Use in the Australian Capital Territory*	
25	2020	COMP4560	Mr. Patrick Salvin	*AgTech*	
24	2020	ENGN4718	Ms. Nicola Armstrong	*Analysis of LoRaWAN Network Performance and Theoretical Design for Agricultural Contexts*	Graduate Network Engineer, Telstra
23	2019	ENGN2706	Mr. Maxwell Ashurst	*UAV Energy Consumption*	Matlab code
22	2019	ENGN2706	Mr. Ratmir Muttagrove	*UAV Trajectory Modelling*	Matlab code
21	2018	ENGN3712	Mr. Tianheng Zhang	*Machine Learning Detection for Ambient Backscatter Communications*	DSP Engineer, Dolby
20	2018	ENGN2706	Ms. Nicola Armstrong	*Modelling of Building Blockages for 5G mmWave Networks*	
19	2018	ENGN2706	Mr. Mingrui Zhao	*Nearest-Neighbor and Contact Distance Distribution for Matérn Cluster Process*	Research assistant, ANU
18	2017	ENGN4712	Ms. Nilupuli Senadhira	*MATLAB Simulation of Random Access Channel in Machine-to-Machine Communication*	Matlab code. PhD student, ANU
17	2017	ENGN2706	Mr. Tianheng Zhang	*MATLAB Simulation of UAV Base Station Networks*	Matlab code

No.	Year	Course	Name	Thesis	Outcome
16	2017	ENGN4718	Mr. Ross Pure	*Computing Closed-Form Distance Distributions in Finite Regions*	2J. 2 month research visit to Prof. Jianping Pan, Victoria University, Canada
15	2016	ENGN2707	Mr. Lachlan Wisdom	*Piezoelectric Energy Harvesting*	Honeywell, Canberra
14	2016	ENGN2706	Mr. Oliver Johnson	*Simulation of the α-Stable Distribution with the Fox H Function for Interference Modelling*	MS EE student, Stanford, USA
13	2016	ENGN4712	Ms. Hyein La	*Distance Distributions in Wireless Networks: A Mathematica Implementation*	Mathematica code
12	2015	ENGN3712	Ms. Nilupuli Senadhira	*Outage Analysis of Underlay D2D Networks with Multiple Antennas at D2D Users*	1C
11	2015	ENGN2706	Mr. Yuxin Liu	*Best Neighbour Distance Distribution in a Poisson Field of Nodes*	PhD student, Caltech, USA
10	2014	ENGN3706	Mr. Daniel Marshall	*Device-to-Device Communication in Cellular Networks*	1C, Google, Sydney
9	2014	ENGN4718	Mr. Craig Wang	*Performance Analysis of Heterogeneous Cellular Networks with Energy Harvesting Base Stations*	1C. PhD, ETH Zurich. Novartis, Switzerland
8	2014	ENGN2706	Mr. Ross Pure	*Distance Distributions in Arbitrarily Shaped Polygons*	1J
7	2014	ENGN2706	Ms. Joyce Mau	*Distance Distributions in Wireless Networks with Repulsion and Cluster Spatial Point Processes*	
6	2013	ENGN2706	Mr. Andrew Jamieson	*Wireless Power Transfer: Design and Simulation of Circuits for Consumer Electronics Applications*	
5	2013	ENGN2706	Mr. Avinash Upadhya	*Coverage Area Distributions of single-tier heterogeneous networks*	PhD student at ANU
4	2012	ENGN2706	Mr. Samuel Stefopoulos	*Development of Matlab graphical user interface for ECG signal analysis*	System Engineer at Cochlear, Sydney
3	2012	ENGN2706	Ms. Hyein La	*Spatial Modelling of Heterogeneous Cellular Networks*	
2	2009	ENGN2706	Ms. Pei Hua Leong	*Beampattern Modelling in Wireless Ad-hoc Networks*	Roy Morgan, Melbourne.
1	2008	ENGN2706	Mr. Da Wang	*Simulation of Geometrical One-ring Scattering Channel Model*	PhD, ANU

BE Honours Student Supervision

Note: J= journal paper, C = conference paper.

No.	Year	Name	Thesis	Outcome
43	2022	Mr. Kurt Johnson	*Bushfire Detection with Low Powered Sensors*	
42	2022	Mr. Nicholas Arnold	*Bushfire Detection using IoT Sensor Networks*	
41	2022	Mr. Hisham Khan	*Performance Analysis of Relay Aided Hybrid Satellite – Terrestrial Networks with Multiuser Opportunistic Scheduling*	
40	2022	Ms. Mingxin Hou	*Downlink Performance Analysis of Low Earth Orbit Satellite Constellation*	
39	2021	Mr. Sichen Shen	*Sum-rate Optimisation of Uplink NOMA System with Intelligent Reflecting Surface*	
38	2021	Mr. Kehan Huang	*A Simulator for LoRa-Based Wireless Mesh Networks and Use Case Analysis*	PhD student at UNSW
37	2020	Mr. Shaoheng Xu	*Wireless Sensor Networks with LoRa Technology*	
36	2020	Mr. Ching Hong Tam	*Impact of Antenna Models on Connectivity for Cellular Connected UAVs*	PhD student at UQ
35	2020	Mr. Kangqing Liu	*Machine Learning for Tag Symbol Decoding in Ambient Backscatter Communication Systems*	Masters student, Imperial College London
34	2019	Ms. Xinran Li	*SWIPT-Enabled Cellular-Connected UAV*	1C. PhD student, Hong Kong University of Science and Technology
33	2019	Ms. Jairui Li	*Ambient Backscatter Communication System: Bit Error Rate Analysis*	PhD student, Monash
32	2019	Ms. Elizabeth Cowling	*Simulation of Ambient Backscatter Communications*	AeroPM, Canberra
31	2019	Mr. Yilin Geng	*Reinforcement Learning for Base Station Selection in Cellular Communication*	Masters student, Penn Engineering, USA
30	2018	Mr. Fanxiao Dong	*Integration of UAVs into 5G Cellular Systems*	
29	2018	Mr. Ian De Jongh	*MATLAB Simulation of Machine Type Communications in 3GPP LTE Networks*	
28	2017	Mr. Daniel Owen	*Wireless Energy Harvesting from WiFi Signals*	BAE Systems
27	2017	Mr. Areeb Saeed	*Machine to Machine (M2M) Communication for Vehicle to Vehicle (V2V) Data Exchange*	Genworth Australia
26	2017	Ms. Maki Shinosaki	*Solar Energy Harvesting Powered Machine to Machine Communication*	DFAT
25	2016	Mr. Josip Simunic	*Development of a Low Power Machine to Machine Communication Architecture*	Google, CA
24	2016	Mr. Jason Lee	*Access Class Barring with Aggregation and Trunking in M2M Communication*	1C
23	2016	Ms. Chong Zhou	*Feasibility of Renewable Powered Base Stations in Canberra*	
22	2016	Ms. Yingyun Ai	*Performance Analysis of Renewable Powered and Cooperative Energy Harvesting Networks*	
21	2015	Mr. Trung Nguyen	*Probability of Node Isolation in Wireless Sensor Network with Arbitrary Shape of Field-of-Interest*	

Note: J= journal paper, C = conference paper.

No.	Year	Name	Thesis	Outcome
20	2015	Mr. Bingfei Fu	*Mobility-aware Interference Modelling in Wireless Networks*	
19	2014	Ms. Xiaohui Zhou	*Wireless Energy Harvesting in Large-scale Ad hoc Networks with Multiple Antenna Transmission Nodes*	1J , Postddoc at Macquarie Uni.
18	2014	Mr. Bin Zhu	*Power Allocation Strategy in Wireless Energy Harvesting Relaying Network*	
17	2013	Mr. Andrew Dawson	*Spatial Point Processes in Wireless Networks*	Matlab code. St Matthew's Anglican Church
16	2013	Ms. Sandra Arcos Holzinger	*ECG Compression using Wavelets*	
15	2012	Mr. Brian Voon Chow	*m-heath Research and Development: Compressed Sensing for Electrocardiography (ECG)*	Scientist, Sime Darby Technology Center, Malaysia
14	2012	Ms. Jing Guo	*Distance Distributions in Regular Shaped Wireless Networks*	1J
13	2011	Ms. Jiazhen Zhu	*Analysing Connectivity of Random Graph, Scale-free and Small-world Networks*	
12	2010	Mr. Beau Heath	*Path Loss Estimation in a Wireless Ad hoc Network*	
11	2010	Mr. Weng Law	*Connectivity of Interference Limited Wireless Ad hoc Networks*	
10	2010	Mr. Chin Chew	*Modelling of Link Duration in Wireless Ad hoc Networks*	
9	2009	Mr. Omar Hashmi	*Frequency Prioritised Queuing in Electrocardiograph (ECG) Systems*	1C. CEA Technologies
8	2009	Mr. Abhas Chandra	*Connectivity of Vehicular Ad hoc Networks*	1C. T-Mobile, Seattle
7	2008	Mr. Vikas Sharma	*Statistical Properties of Sum-of-Sinusoid Channel Models*	Associate Director, Protiviti
6	2008	Ms. Vasanta Gayatri Chaganti	*OPNET Simulation of two On-Demand Network Routing Protocols*	PhD, NICTA
5	2008	Mr. Santit Gow Traithavil	*Method of Exact Doppler Spread for Simulation of Wireless Communication Channels*	Software Engineer at Canva
4	2007	Mr. Xiangyun Zhou	*On the Connectivity of Wireless Adhoc Networks utilizing Beamforming*	2C. A/Prof., ANU
3	2007	Mr. James Tyler Ridgway	*Development of an Infrared Wireless Communication System*	
2	2006	Ms. Saba Latif	*Statistical Properties of a Parametric Channel Model for Multiple Antenna Systems*	1C. Google, San Francisco, USA
1	2006	Mr. Andrew Norman	*Investigation into Transmit Diversity for Third Generation CDMA Wireless Systems*	

Refereed Publications Co-authored with Undergraduate Students

No.	Year	Course	Name	Paper	Citations
14	2020	ENGN4200	Ms. Xinran Li	[C90]	
13	2016	ENGN4718	Mr. Ross Pure	[J63]	
12	2016	ENGN4200	Mr. Jason Lee	[C73]	Cited by 2
11	2015	ENGN3712	Ms. Nilupuli Senadhira	[C68]	Cited by 3
10	2014	ENGN3706	Mr. Daniel Marshall	[C57]	Cited by 13
9	2014	ENGN2706	Mr. Craig Wang	[C54]	Cited by 7
8	2014	ENGN2706	Mr. Ross Pure	[J28]	Cited by 29
7	2014	ENGN4200	Ms. Xiaohui Zhou	[J30]	Cited by 23
6	2012	ENGN4200	Ms. Jing Guo	[J22]	Cited by 14
5	2010	ENGN4200	Mr. Omar Hashmi	[C28]	
4	2009	ENGN4200	Mr. Abhas Chandra	[C27]	Cited by 60
3	2007	ENGN4200	Mr. Xiangyun Zhou	[C18]	Cited by 8
2	2007	ENGN4200	Mr. Xiangyun Zhou	[C16]	Cited by 15
1	2006	ENGN4200	Ms. Saba Latif	[C17]	Cited by 2

Research Related Media Interviews and Student Profiles

1 2018: Recognising excellence: the 2018 VC's Awards for Supervision Excellence. `https://cecs.anu.edu.au/news/recognising-excellence-2018-vcs-awards-excellence`

2 2016: Interview with 2CC (local Canberra) radio station on 13 July, 2016 regarding wireless power transfer.

3 2016: Breakthrough in powering wireless sensors: `http://www.anu.edu.au/news/all-news/breakthrough-in-powering-wireless-sensors#`

4 2016: Student alumni research profile (Daniel Marshall): `https://cecs.anu.edu.au/news/alumni-recognised-high-quality-research`

5 2016: ANU BE R&D research showcased in IEEE Communications Society Asia Pacific Region Newsletter: `http://site.ieee.org/comsoc-apb/files/2016/07/newslist49.pdf`

6 2015: Student profile (Ross Pure). `https://eng.anu.edu.au/news/meet-ross-pure-published-2nd-yr-engineering-rd-student`

Engagement with Industry

1 Attended the *ANU-OPTUS Bushfire Workshop No. 1*, Spring Valley, Canberra, 16 June 2022.

2 Meeting with German company Dryad (`https://www.dryad.net/`) to discuss sensor technologies and solutions, May 2022.

3 Meeting with Australian company Wildlife Drones (`https://wildlifedrones.net/`) to discuss drone tracking solutions, March 2022.

4 Attended the Siemens Australia 2017 Digitalize Conference, Sydney in Aug. 2017.

5 **S. Durrani** and N. Yang, *Presentation before DFAT/ASD visiting group*, ANU, April 2017.

6 ANU media release on breakthrough in powering wireless sensors in July 2016: `http://www.anu.edu.au/news/all-news/breakthrough-in-powering-wireless-sensors#`. This also led to a 7 minute interview on 2CC radio station (estimated audience 6000).

Continued Professional Development

1 Completed the "*ANU HDR Supervision Annual Registration*, 2019-present.

2 Attended the "*Examination of theses: selecting examiners, and on being an examiner*" workshop, CHELT, May 2012.

3 Attended the "*Coaching in doctoral supervision: Developing candidate autonomy*" workshop, CHELT, May 2012.

4 Attended the "*ANU Future Research Leaders Program (FRLP)*, CEDAM, Sem 2, 2011.

5 Attended the "*Induction for New Supervisors*" workshop, CEDAM, Nov. 2007.

6 Attended the "*Postgraduate Advising*" workshop, CEDAM, June 2005.

EDUCATION

Invited Talks and Workshops

1 **S. Durrani, J. Simmons, A. Bastine and J. Friel**, Organized *Knowledge Sharing Session* for engineering convenors, focusing on My Timetable tips and best practices, July, 2022.

2 **S. Durrani**, Invited as a speaker at the *2022 CECS Promotions Information Session* for prospective applicants, June 2022.

3 **S. Durrani, J. Simmons and J. Friel**, Organized *Knowledge Sharing Session* for engineering convenors, focusing on Wattle tips and best practices, July, 2021.

4 **S. Durrani**, Invited to talk to academics as part of RSEEME Convenor Induction Session on *Teaching and Course Coordination*, Oct. 2019.

5 **S. Durrani**, Invited to participate as a panel member in *Research Methods class for ENGN2706 Students*, March 2019.

6 **S. Durrani**, Invited to share supervision experiences at the CECS HDR Supervision Forum, Feb. 2019.

7 **S. Durrani**, Invited to participate in the *Sharing Supervision Stories*, ANU HDR Supervision Workshop, Nov. 2018.

8 **S. Durrani**, *Boosting Learning Using Poll Everywhere*, ANU TELfest seminar, Nov. 2018.

9 **S. Durrani**, Invited to give a talk to ECRs regarding *Demystifying the Dark Arts of Teaching*, CECS Semeter 2 Bootcamp, June 2018.

10 **S. Durrani**, *Effectively Managing your PhD Supervisor*, Communications research group seminar, June 2018.

11 **S. Durrani**, Invited to participate in CHELT professional development modules for early career researchers (ECRs) in Science (CMBE, CPMS & CECS): *Module ECR2: The Teaching Research Nexus*, CHELT, ANU, Aug. 2017.

12 **S. Durrani**, Invited to give a talk to visiting Indonesian academics regarding *Making Expert Thinking Visible*, CHELT, ANU, Dec. 2016.

13 **S. Durrani**, Invited to act as facilitator for session *How do we leverage fellowship for promotion and reward?*, ANU EFS Colloquium, May 2016.

14 **S. Durrani**, Invited to give a talk at EF6 workshop regarding *Developing your Philosophy of Teaching and Learning*, CHELT, ANU, May 2016.

15 **S. Durrani**, *Research-Based Framework for Supervision of Undergraduate Research Projects*, CECS Teaching and Learning Seminar Series, Sep. 2015.

16 **S. Durrani**, *Making Expert Thinking Visible*, ANU Teaching and Learning Colloquium Seminar, June 2015.

17 **S. Durrani**, Invited to talk to academics in the Research School of Engineering regarding *Feedback*, Oct. 2012.

18 **S. Durrani**, Invited to talk to academics in the Research School of Computer Science regarding *How to be an effective teacher*, March 2012.

19 **S. Durrani**, *Running tutorials and labs in Engineering*, CECS Teaching Quality Program, July 2011.

20 **S. Durrani**, *Using Wattle for Course Entry and Exit Surveys*, CECS Education Innovation Series Seminar, July 2010.

21 **S. Durrani**, *Using Simulation Tools to Promote Learning in Higher Education*, CECS Seminar, Nov. 2007.

Mentoring

1 Referee and nominator for Dr. Xiaolin (Shannon) Wang (recipient of Vice-Chancellor's Award for Early Career Academics, 2021).

2 Mentor for Dr. Catherine Galvin (recipient of Dean's Award for Remote Teaching and Student Experience Awards in Aug. 2020).

3 *Registered mentor* with the ANU NECTAR Mentoring Program 2019-2020.

4 Referee for 14/29 members of the ANU Educational Fellowship Scheme (EFS) from College of Engineering & Computer Science (including 4 out of the 6 SFHEAs) (last updated June 2018).

5 Mentoring meeting with Dr. Rebecca Tan and Dr. Sorin Daniliuc, Research School of Accounting, ANU regarding adopting Mastering (Pearson) in BUSN1001, Dec. 2017.

6 Mentoring meeting with Dr. Jennie-Ann Mallela, ARC DECRA Fellow, Research School of Biology & Research School of Earth Sciences, ANU in 2016.

7 Worked closely with Assoc. Prof. S. Kalyanasundaram, Research School of Engineering in 2017. The ENGN2217 course satisfaction improved to 80% in 2017 (2016: 34%, 2015: 31%). Myself and Assoc. Prof. S. Kalyanasundaram were awarded the inaugural **RSEng Education Team Award** in July 2017.

8 Mentoring meeting and emails with Dr. Patrick Haslum, Research School of Computing in Semester 2, 2017. The COMP1730 course satisfaction improved from 29% in 2016 to 50% in 2017.

9 Referee for Dr. David Nisbet (winner of 2015 CECS Dean's Award for Teaching Excellence in the category "Award for Contributions to Programs that Enhance Student Learning".

10 Referee for Prof. Peter Christen (winner of 2014 VC's award for excellence in supervision).

11 Referee for 4 successful IEEE Senior Member applicants (Dr. Zubair Khalid, 2020 Dr. N. Yang, 2018, Dr. J. Kim, 2015, Dr. Xiangyun Zhou, 2014).

Teaching Equipment Grants ($323k in total to date)

1 D. Shaddock, **S.Durrani** and E. Scipione, "Enabling world-leading remote education and establishing a new advanced Manufacturing", ACT PIP Grant ($40k), 2021.

2 **S. Durrani** and X. Zhou, "Purchase of MOKU lab instruments", Research School of Engineering Grant ($75k), 2018.

3 **S. Durrani**, "Telecommunications Instructional Modeling System (TIMS)", CECS Deans Teaching Equipment Grant, ($150k), 2010.

4 E. Scipione and **S. Durrani**, "Upgrade of Electronic Circuits labs", ANU Teaching Equipment Fund Grant, ($58k), 2008.

Undergraduate Student Awards

Note: For awards $1-6$ below, I was honours supervisor of the students. For awards $7-9$, I was course convenor and referee for the students.

1 **ANU University Medal**

(a) Nicola Armstrong, 2021
(b) Tianheng Zhang, 2019.
(c) Ross Pure, 2018.
(d) Daniel Marshall, 2015.
(e) Craig Wang, 2014.
(f) Jing Guo, 2012.
(g) Xiangyun Zhou, 2007.

2 **ANU CECS Ian Ross Honours Scholarship**

(a) Ian De Jongh, 2018.

3 **ANU Honours Scholarship**

(a) Xiaohui (Katrina) Zhou, 2014.

4 **Engineer's Australia Awards**

(a) Jing Guo, Institution of Engineering & Technology (IET) Student Prize, 2012 (for outstanding achievements as an ANU engineering student).
(b) Syed Omar Hashmi - Winner of ITEESPAN - Annual Student Presentation and Awards Night, Engineers Australia, 2009.

5 **CEA Technologies Prize in Telecommunications**

(a) Jing Guo, 2011.
(b) Syed Omar Hashmi, 2009.
(c) Santit Traithavil, 2008.
(d) Vikas Sharma, 2007.
(e) Xiangyun Zhou, 2006.

6 **Department of Engineering Awards**

(a) Andrew Norman, Summer Research Scholarship (4th year), 2005-2006.
(b) Santit Traithavil, Engineering Research and Development Scholarship (2nd year), 2005-2006.

7 **Defence Nuclear Science and Technology Scholarship**

(a) Aisha Amin-Wood, 2022 (student in my ENGN1218 course; I was her referee).

8 **ABC Women in Broadcast Technology (WiBT) Scholarship**

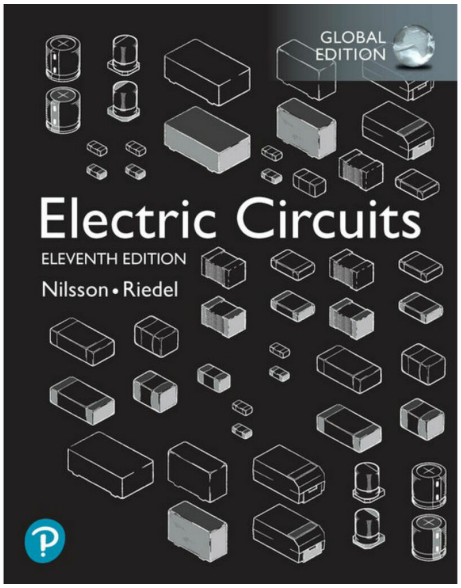
(a) Elizabeth Cowling, 2017 (student in my ENGN2218 course; I was her referee).

9 **Lisa Brodribb Scholarship for Women in Engineering**

(a) Ruth Kravis, 2018 (student in my ENGN2218 course and undergraduate tutor for peer-assisted student drop-in sessions in my engn1218 course).

Reviewer for Textbook

1 Reviewer for the following textbook: J. W. Nilsson and S. A. Riedel, *Electric Circuits*, 11th Global edition, Pearson, 2019.



Acknowledgments for the Global Edition

Pearson would like to thank and acknowledge the following people for their contributions to the Global Edition.

Contributors

Murat Doğruel, Marmara University
Sachin Jain, National Institute of Technology Raipur
Sanjay H.S., M.S. Ramaiah Institute of Technology
Babu K.S., M.S. Ramaiah Institute of Technology

Reviewers

Chayanika Bhagabati, Assam Down Town University
Salman Durrani, Australian National University
Marc A. Eberhard, Aston University
Gang Lei, University of Technology Sydney
Nikhil Marriwala, University Institute of Engineering and Technology, Kurukshetra University
Mohammad Nassereddine, American University in Dubai
Nalan Özkurt, Yaşar University
Ha Pham, University of Technology Sydney

Engagement with Industry

1 Presentation before *Research School of Engineering Industry Advisory Board* on Electronics and Communications major, May 2016.

2 Organized guest speakers from industry (Australian Communications and Media Authority, CEA Technologies, Dolby and Qualcomm) for courses in Electronics and Communications major.

3 Liaised with Liquid Instruments, Emona Instruments, National Instruments and Pearson Australia regarding hardware platforms, simulation softwares and online learning tools for courses in Electronics and Communications major.

Education Related Media Interviews and Contributions

1 2020: Combining Poll Everywhere with Pedagogy, published in ANU CLT Interact Newsletter, Oct. 2020. https://teaching.weblogs.anu.edu.au/2020/10/07/combining-poll-everywhere-with-pedagogy/

2 2018: ANU Telfest talk published on YouTube. https://www.youtube.com/watch?v=XXuyRHYoETI

3 2018: Portfolio for successful ANU Vice-Chancellor's Award for Excellence in Supervision: https://services.anu.edu.au/system/files/award-grant/2018-vc-supervision-durrani.pdf

4 2017: Boosting participation with Poll Everywhere, published in ANU EFS News, Issue no. 2, Dec. 2017. https://services.anu.edu.au/files/publication-collection/EFS\%20News\%20Dec\%202017.pdf

5 2017: Elizabeth Cowling, a student in my ENGN2218 course, is awarded ABC WiBT Scholarship: https://cecs.anu.edu.au/news/anu-student-awarded-abc-women-technology-scholarship-0

6 2016: Friend of ANU Fifty50 Profile (one of the most popular posts on the ANU Fifty50 blog for 2016): https://anufifty50.wordpress.com/2016/04/29/salman-durrani/

7 2015: Faces of ANU Interview. https://www.facebook.com/FacesofANU/photos/a.546205175469840/841445832612438

8 2014: Fellowship with HEA: https://cecs.anu.edu.au/news/dr-salman-durranis-fellowship-hea

9 2012: Portfolio for successful ANU Vice-Chancellor's Award for Teaching Excellence: https://services.anu.edu.au/system/files/award-grant/2012-vc-teaching-durrani.pdf

Continued Professional Development

1 Attended the "*CECS Teaching and Learning Intensive*", workshop by ANU Centre for Learning and Teaching (CLT), The Australian National University, July 2020.

2 Attended the "*Deep and Interactive Learning in Lectures*", seminar by Glen O'Grady (Director CHELT), The Australian National University, Dec. 2017.

3 Attended the "*ANU Educational Fellowship Scheme Colloquium*", The Australian National University, May 2016.

4 Attended the "*EFS Masterclass: Engaging Students in research-led education*" workshop by Prof. Mick Healey (Emeritus Professor, University of Gloucestershire), The Australian National University, Aug. 2015.

5 Attended the "*Closing the Loop: Good practice to good research to good practice*" workshop by Dr. Lesley Jolly, The Australian National University, June 2013.

6 Attended the "*Panel 7: Conceptualising research-led education at the ANU*" workshop as part of ANU Educational Research Conference, Nov. 2011.

7 Attended the "*Stage 1 Competency Standards Launch*" national workshop organised by Engineers Australia, Sep. 2011.

8 Attended the "*Using Technology In Your Teaching To Improve Learning Outcomes*" workshop organised by Pearson Australia, The Australian National University, June 2011.

9 Invited to attend the "*How can we develop learning trajectories that recognise, plan and support lifelong professional learning?*" workshop by Prof. Michael Eraut (Univ. of Sussex, UK), CEDAM, ANU, Nov. 2007.

10 Completed the "*Graduate Certificate in Higher Education*", CEDAM, ANU, 2005 - 2007.

- EDUC8002 Learning and Teaching in Higher Education, Semester 2, 2005.
- EDUC8003 Curriculum Design and Innovation, Semester 1, 2006.
- EDUC8004 Research Higher Degree Supervision, Semester 1, 2007.
- EDUC8001 Enhancing your Academic Practice, Semester 2, 2007.

11 Attended the "*Introduction to Teaching & Learning for UQ*" workshop, The University of Queensland, Nov. 2004.

12 Attended the "*Effective Teaching*" workshop by engineering educationalists Dr. Richard M. Felder and Dr. Rebecca Brent, The University of Queensland, Oct. 2003.

SERVICE

Membership of University/College/School Committees

Level	Year	Role	Committee	Noteworthy Contribution
			Research	
ANU	2014	Backup Chair	ANU ERA Panel 10 (Technology)	I attended all the meetings to discuss the strategies and assisted the Chair in completing the tasks.
School	2015 - 2017	Academic responsible	Stakeholder for Communications research theme in the new college web site redesign	I was responsible for setting up and maintaining the communications group research page.
School	2013	Acting Group Leader	Applied Signal Processing research group	I was acting group leader for 4 months (April - July) during Prof. Rod Kennedy's leave of absence.
			Service	
College	2021	Member	CECS Local Promotion Committee	
College	2013-2012	Member	CECS Advisory Body Steering Committee	This was a new body set up in 2012 (comprising CECS academic, general and adjunct staff). As a member of the advisory body, I contributed to the committee discussions to generate agenda items for the advisory forum, including mentoring of early career researchers within CECS.
College	2008	Member	Outreach Working party for CECS Retreat	
School	2023	Member	FERL Conversion Panel	
School	2023	Chair	Selection committee for Educational Officer position	
School	2021	Member	Selection committee for Educational System Officer position	
School	2015	Member	Teaching Space Working Committee, Research School of Engineering	
School	2014	Member	Liaison Committee for Level C/D position in Electrical Engineering, Research School of Engineering	Standard role
School	2012	Member	Liaison Committee for Associate Professor - Solar Thermal Energy Engineering position, Research School of Engineering	Standard role
School	2012	Member	Selection Committee for postdoc position within the Research School of Engineering	Standard role
School	2011	Member	Liaison Committee for Fellow Position within the Research School of Engineering	Standard role

Level	Year	Role	Committee	Noteworthy Contribution
			Education	
ANU	2018-2021	Member	ANU Appeals Panel	Served as committee member for 2 appeal cases.
ANU	2018-2020	Member	ANU Student Survey Working Group	I contributed to the wording and ordering of the SELT survey questions currently being used by ANU.
ANU	2015-2014	Member	Inaugural ANU Educational Fellowship Scheme Committee	
ANU	2014-2013	Member	ANU Vice Chancellor's Awards for Excellence in Education Committee	I contributed to the group discussions to rank the successful candidates and to identify candidates for national teaching awards.
ANU	2009	Member as ANU representative	Program Reference Group, CIT	
College	2015	Member	Course Review Group, Research School of Computer Science	I contributed to the committee discussions and the joint report, especially the review of the large second year computing course.
College	2010	Member	Dean's Teaching Awards Selection Committee	
College	2009	Member	Dean's Teaching Awards Selection Committee	
College	2009	Member	CECS Working Group on Education	
College	2010-2008	PhD Student Advisor	CECS, ANU	I proposed the setting up of a PhD student mentoring programme within CECS. This was set by Deb Pioch in 2008.
School	2021	Chair	Selection committee for Educational Lab Developer positions	Under my leadership, the committee appointed two lab developers.
School	2020	Member	CECS ANU Open day organising committee	I was the School representative response for planning and coordinating activities across the School.
School	2018	Member	Revision of engineering fundamentals committee	
School	2016-2015	Discipline Chair	Electronics and Communications Systems Major	
School	2016-2014, 2012	Member	Curriculum Development Committee, Research School of Engineering	
School	2010-2008	Student Mentor	BE Research and Development program, School of Engineering, ANU	
School	2008-2006	Program Advisor	Department of Engineering, ANU	I gave enrollment advice to undergraduate students, including at Melville Hall sessions at the beginning of each year.
School	2005	Member	Department of Engineering Scholarships Committee	

Editorial and Reviewer Activities

– Journal Editorial Board

No.	Year(s)	Journal	No. of Manuscripts
1	Feb. 2015 – 2020	IEEE Transactions on Communications	Overall, 71 manuscripts handled with 30 accepted and 41 rejected
2	June 2014 – June 2015	Ad Hoc & Sensor Wireless Networks Journal	10

– Reviewer for International Journals

No.	Journal	2006-2011	2012-2017	2018-2022	2023	2024	2025	2026	Total
1	IEEE Transactions on Wireless Communications	2	13	24					39
2	IEEE Transactions on Communications	4	12	5					21
3	IEEE Transactions on Signal Processing	2	5						7
4	IEEE Transactions on Vehicular Technology	0	4	11					15
5	IEEE Journal on Selected Areas in Communications	0	2	1					3
6	IEEE Transactions on Antennas and Propagation	1	0						1
7	IEEE Transactions on Aerospace and Electronic Systems	0	1						1
8	IEEE Transactions on Green Communications and Networking	0	1						1
9	IEEE Transactions on Information Theory	0	0	1					1
10	IEEE Transactions on Mobile Computing	0	0	4					4
11	IEEE Communications Letters	9	9	1					19
12	IEEE Wireless Communications Letters	0	3	4					7
13	IEEE Signal Processing Letters	0	1						1
14	IEEE Sensors Journal	0	1						1
15	IEEE Internet of Things Journal	0		7					7
16	IEEE Internet of Things Magazine	0		1					1
17	IEEE Access			2					2
18	IET Communications	0	3						3
19	Wireless Communications and Mobile Computing (Wiley)	3	1						4
20	Wireless Personal Communications (Springer)	1	1						2
21	Mathematical Methods in Applied Sciences			1					1
22	Others	4	2						6
	TOTAL	26	59	62					144

Note: In the last 5 years, I have had to decline around 10 review invitations per year for IEEE Transaction papers due to other commitments.

— External Thesis Examiner

- Examiner for 4 international PhD thesis:
  1. 2022: University of British Columbia, Canada
  2. 2021: Lahore University of Management Sciences, Pakistan
  3. 2018: IIT Guwahati, India.
  4. 2015: University of New Brunswick, Canada.
- Examiner for 28 external PhD thesis:
  1. 2023: RMIT University.
  2. 2022: University of New South Wales.
  3. 2022: University of Sydney.
  4. 2022: RMIT University.
  5. 2022: University of Sydney.
  6. 2021: Flinders University.
  7. 2021: RMIT University.
  8. 2021: Macquarie University
  9. 2020: Monash University.
  10. 2020: RMIT University.
  11. 2020: RMIT University.
  12. 2020: University of Technology Sydney.
  13. 2019: University of Melbourne.
  14. 2019: Macquarie University.
  15. 2019: University of Melbourne.
  16. 2018: University of Sydney.
  17. 2018: Macquarie University.
  18. 2017: Royal Melbourne Institute of Technology.
  19. 2016: University of Technology Sydney.
  20. 2016: University of Melbourne.
  21. 2016: Macquarie University.
  22. 2016: University of Melbourne.
  23. 2016: Queensland University of Technology.
  24. 2015: University of Melbourne.
  25. 2015: University of Tasmania.
  26. 2013: Queensland University of Technology.
  27. 2009: Queensland University of Technology.
  28. 2008: Monash University.
- Examiner for 4 external MPhil theses:
  1. 2015: Macquarie University.
  2. 2011: Queensland University of Technology.
  3. 2009: Victoria University.
  4. 2008: University of Queensland.

Conference Related Professional Activities

— Conference Organising Committee Member

- 2016 (17th) Australian Communications Theory Workshop (Finance Chair).

  AusCTW is the leading national conference on telecommunications. As finance chair (`http://ausctw2017.org/committee.html`), I worked closely with the conference chair. In particular, I took lead in securing additional funding from Research School of Engineering ($5000/-) and IEEE ACT Section ($500/-) to successfully host the conference at ANU (100 attendees).

— Conference Technical Programme Committee Co-Chair

- 2023 IEEE Wireless Communications and Networking Conference (WCNC) (co-chair for Track 3 AI and Optimisation for Wireless Communications).
- 2019 IEEE International Conference on Wireless for Space and Extreme Environments (WISEE) (TPC co-chair of Workshop on Integrated Ground-Air-Space Borne communications (IGASC)).

— Conference Session Chair

- 2016 IEEE International Conference on Communications (ICC), Kuala Lumpur, Malaysia (Session CT-IS2: Communication Theory Interactive Presentations).
- 2016 IEEE International Conference on Signal Processing and Communication Systems (ICSPCS), Gold Coast, Australia (Session O9: Wireless Networks).
- 2014 IEEE International Conference on Communications (ICC), Sydney, Australia (Session CT-P1: Communication Theory Interactive Presentations).
- 2007 IEEE PIMRC conference, Athens, Greece (Session 36: Smart Antennas I & Session 62: Self-organization of wireless networks).

— Conference Technical Programme Committee Member

- IEEE International Conference on Communications (ICC): 2023—2012.
- IEEE Global Telecommunications Conference (Globecom): 2023—2016.
- IEEE Vehicular Technology Conference (VTC): Fall: 2019. Spring: 2021, 2018, 2017.
- IEEE Globecom Workshop - Emerging Technologies for 5G Wireless Cellular Networks: 2017—2014.
- IEEE Globecom Workshop - Sub-6 GHz Spectrum for 5G Progress: 2017.
- IEEE International Conference on Signal Processing and Communication Systems (ICSPCS): 2016—2013.
- International Conference on Telecommunications (ICT, 22nd): 2015.
- International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM, 10th): 2015.
- IEEE Personal, Indoor, and Mobile Radio Communication Conference (PIMRC): 2021, 2012, 2011.
- Australian Communications Theory Workshop (AusCTW): 2012, 2011.

Professional Services to Wider Community

- IEEE ACT Chapter Chair
  - I was the Chair of the ACT Chapter of the IEEE Signal Processing and Communications Societies in 2015-2016. My notable achievements include:
    - Organised 5 technical activities in 2015, including 2 speakers from IEEE Signal Processing Society's Distinguished Lecturer program (Prof. Akihiko Sugiyama and Prof. Hamid Krim).
    - Organised 10 technical activities in 2016, including 1 speaker from IEEE Communications Society's Distinguished Lecturer program (Prof. Jalel Ben-Othman) and 1 speaker from IEEE Vehicular Technology Society's Distinguished Lecturer program (A/Prof. Marco Di Renzo).
    - ANU BE R&D research was reported in IEEE Communications Society Asia Pacific Region Newsletter, No. 49, May 2016, pp. 15-16. `http://site.ieee.org/comsoc-apb/files/2016/07/newslist49.pdf`
    - Under my leadership, the chapter was awarded IEEE Signal Processing Society's Chapter Certification, in recognition of the chapter activities (valid for 4 years from 1-1-2017 through 31-12-2020).

- Outreach Activities
  - Academic Representative, CECS Marketing Trip to Malaysia
    - I was the sole academic representative in the CECS marketing trip to Malaysia on May 23, 2016. We visited our partner institutions German-Malaysian Institute (GMI) and University of Kuala Lumpur (UniKL) to discuss issues such as strengthening pathways into ANU degrees and possible PhD collaborations. I was supposed to give an invited talk at UniKL, but this was cancelled by our hosts at the last minute due to constraints on their side.
  - Guest Lectures
    - **S. Durrani**,"Matlab Applications in Signal Processing & Communications Research", ENGN2229 Computing for Engineering Simulation, Semester 1: 2014, Semester 2: 2013, 2012, 2011 and 2010.
    - **S. Durrani**, S. Durrani,"Using Simulink for Simulation of Digital Communication Systems", ENGN3226 & ENGN6626 Digital Communications, Semester 1: 2014.
  - ANU Open Day
    - I am passionate about participating in outreach activities and promoting engineering in the wider community. I have developed and presented Electronics and Telecommunications demos and regularly participated in ANU Open Day: 2019, 2015-2014, 2012-2005.
  - ANU Extension Workshop
    - ANU Extension provides an enhanced learning experience for year 11 and 12 students in ACT schools and colleges (`http://extension.anu.edu.au/`).
    - I have developed and presented an ANU Extension workshop to year 11 and 12 students on *How does error correction coding work in Bluetooth*, Aug. 2014 and Aug. 2016.
    - The feedback has been very positive with comments such as I learnt more than I expected (2014) and Loved the workshop! Found it informative, interactive and surprisingly relatable (2016).
  - Archimedes Day Workshop
    - Archimedes Day was an ANU outreach activity for year 11 and 12 students, that ran from 2007-2005.
    - I conducted ANU Archimedes Day Telecommunications workshop on *Coding to Keep a Secret*: June 2007 (one session), June 2006 (one session), Sep. 2005 (four sessions) and July 2005 (two sessions).

Continued Professional Development

1 Completed the "*Leading Learning and Teaching at ANU Training*", May, 2022.

2 Attended the "*ANU & CECS Governance Training Pilot Training*", Feb. 2022.

3 Completed PULSE module on "*Selection Committee Chair Training*", April 2021.

4 Completed PULSE module on "*ANU Privacy Awareness Training*", April 2021.

5 Completed PULSE module on "*ANU WHS Risk management Training*", April 2021.

6 Completed an eLearning course on "*Infection Control Training - COVID 19*", May 2020.

7 Attended the Australian Institute of Management three day workshop "*The Supervisor Program*", Nov. 2013.

8 Attended the workshop "*Recruitment and Selection of Staff*", Nov. 2013.

9 Attended the half-day workshop "*Having Powerful Conversations*", Sep. 2013.

10 Completed the CEDAM on-line course "*Workplace Discrimination and Harassment - Legal Compliance*", April 2005.