

Yoni Nazarathy - Curriculum Vitae

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Current Position(s)

1. *Associate Professor*, School of Mathematics and Physics, The University of Queensland (UQ). A continuing research and teaching academic. Working part time in this role since 2022. Joined UQ as a lecturer in 2012 with promotions to senior lecturer in 2015 and associate professor in 2020. Over the years, responsibilities have included the full spectrum of academic work including research, course development, program development, teaching, student supervision, major conference organization, industry outreach, mentoring junior staff, and other service activities.
2. *Co-Director and Consultant*, Accumulation Point Pty Ltd (since 2018). Consultant and co-founder in a privately owned company providing expertise to domestic Australian clients and overseas clients in artificial intelligence, machine learning, statistics, optimization, and software development.

Condensed Career History

Primary and secondary schooling across Israel and Palo Alto, California, followed by a three-year military service in combat units. After release, undertook a five-year bachelor and masters program, obtaining both undergraduate and master's degrees in economics and statistics from the University of Haifa. In parallel, a degree in programming and software engineering from a professional college and work in the tech industry. Over the next five years, immersed in the tech industry, focusing on software and algorithm development, team leadership, and systems engineering within the advanced wireless networks sector.

Academic pursuits continued with a three and a half year PhD in applied probability at the University of Haifa, where in addition to PhD research in applied probability, fully engaged in lecturing classes and creating course materials. Upon PhD completion, embarked on a two-year postdoctoral journey at two premier applied probability centers, EURANDOM in TU/e Eindhoven and CWI in Amsterdam. Advanced to full time teaching and research academic work in Australia as an applied mathematics lecturer at Swinburne University of Technology in Melbourne for one and a half years.

This followed by securing a continuing teaching and research academic position at UQ. Shortly after commencing at UQ, secured an ARC DECRA fellowship, dedicating three years to focused research. Promotions to senior lecturer on January 1, 2015, and associate professor on January 1, 2020. Multiple research and industry collaboration grants over the years from ARC, GRDC, Advance Queensland, and internal UQ grants. Nearly 50 refereed publications to date, mostly in the mathematical sciences, and two published mathematical books in the field of AI, "Statistics with Julia: Fundamentals for Data Science, Machine Learning and Artificial Intelligence" (2021) and "Mathematical Engineering of Deep Learning" (2024).

Between 2015 and 2019, actively engaged in industry and entrepreneurship, which led to a reduction in full-time commitment to UQ (80% employment during 2018-2019). Through the COVID period, 2020-2023, engaged in multiple public health projects including leadership and creation of the safe blues project, coordination and securing funding for UQ's AI4Pandemics group, and contribution to UQ's ODeSI program.

Since 2022 operating part-time at UQ and working on consulting projects via the co-created consultancy, Accumulation Point Pty Ltd. Projects include machine learning analysis in vision, statistical modelling in pharmacology and medicine, analysis of solar power systems, and most recently an intense focus on large language models, their tuning, and applications.

Main Academic Research Interests and Professional Expertise

Academic focus spans artificial intelligence, machine learning, statistics, operations research, and applied probability. Industry consulting experience extends through machine learning (vision and language), statistics (pharmacology and bio-statistics), and software development for such domains. Research work has had broad application across epidemics, wireless networks, agriculture, power systems, and transportation networks.

Research work includes the safe blues project which applies a novel approach for tracking viruses such as COVID-19 using artificial intelligence methods. Other research work includes machine learning of restless bandits for the challenge of dynamically allocating limited resources to evolving environments. The book work of the “Mathematical Engineering of Deep Learning” is a comprehensive study of deep learning advancements. Work around the Julia language, includes the comprehensive book “Statistics with Julia: Fundamentals for Data Science, Machine Learning and Artificial Intelligence”. Work on structured Markov chains and linear control theory explores the intriguing intersection between matrix analytic models (MAM) and linear control theory, highlighting similarities in the mathematics underlying linear systems and phase-type distributions. Earlier work in queueing theory includes the discovery of the BRAVO Effect in queues, signifying “Balancing Reduces Asymptotic Variance of Outputs”. Related work is in queueing network scheduling and control focuses on the complex analysis and decision-making for scheduling in intricate queueing networks as well as parameter estimation in queues. Other projects in statistics, optimization, queueing theory, and general applied probability cover a breadth of topics relevant for artificial intelligence and its analytical analysis.

Education

PhD in Applied Probability, University of Haifa, 2006 – 2009. Dissertation: On the Control of Queueing Networks and the Asymptotic Variance Rate of Outputs. Supervisor: Prof. Gideon Weiss whom himself was supervised by Sir David Roxbee Cox, 1970’s.

M.A. in Applied Probability (summa cum laude), University of Haifa, 1999 – 2001. Thesis: Evaluation of On-Line Scheduling Rules for High Volume Job Shop Problems - a Simulation Study.

M.A. in Applied Probability (summa cum laude), University of Haifa, 1999 – 2001. Thesis: Evaluation of On-Line Scheduling Rules for High Volume Job Shop Problems - a Simulation Study.

Software Engineering and Programming Diploma, Minhal College, Haifa, 1999 – 2000.

B.A. in Statistics and Economics, University of Haifa, 1996 – 2000. Complementary mathematics, computer science, and electrical engineering courses at the Technion, Israel Institute of Technology.

Previous Academic Positions

2010 – 2012 Swinburne University of Technology, Faculty of Engineering, Applied Mathematics Lecturer (on-going continuing position).

2009 – 2010 Eindhoven University of Technology, EURANDOM, Post-doctoral researcher.

2009 Centrum Wiskunde & Informatica (CWI), Amsterdam, Stochastic Networks Group, Funded visiting researcher.

2005 – 2009 The University of Haifa, The Department of Statistics, Adjunct lecturer and course coordinator (2 per year during PhD).

Previous Industrial Positions

2015 – 2019 Founder and director of One on Epsilon Pty Ltd, a mathematics education startup.

2003 – 2006 “R” Industries (Communications System Division). System Engineer and software Development Group Leader: 5 person group.

2001 – 2003 “R” Industries (Communications System Division). Software Engineer: Real-Time OO programming.

1996 – 1999 Kulicke and Soffa (Semiconductors manufacturing equipment). Technical Writer (part-time during BA studies).

Competitive Research Grants Awarded

2023 – 2027 Analytics for the Australian Grains Industry (AAGI), Grains Research and Development Corporation. Serving as main point of contact for School of Mathematics and Physics for this major grant.

2018 – 2021 ARC Discovery Early Career Research Award, DP180101602 Time Consistency, Risk-Mitigation and Partially Observable Systems, \$387K (AUD).

2016 – 2017 Reconfiguration planning of the Nambour General Hospital through discrete event simulation, Flinders University.

2016 – 2017 OakBridge Investments Knowledge Transfer Partnership Project, Queensland Government Advance Queensland Knowledge Transfer Partnerships.

2013 – 2015 ARC Discovery Early Career Research Award, DE130100291 Adaptive control of stochastic queueing networks, \$375K (AUD).

2013 – 2015 ARC Discovery Project, DP130100156, Congestion control of networks: a unified stochastic framework. \$300K (AUD) (Swinburne administered - \$80K passed to UQ).

Internal Research Grants Awarded

2023 - 2028 UQ HERA Accelerator grant for ODeSI Operational Research and Decision Support for Prevention, Control and Elimination of Infectious Diseases.

2021 - 2022 AI4Pandemics special support grant, \$560K. See group website <https://ai4pandemics.org/>.

2016 – 2017 Towards a unified treatment of structured Markov Models and Linear Control Theory, UQ Early Career Researcher.

2012 – 2013 Parameter Estimation of Stochastic Queueing Networks, UQ New Staff Research Start-Up Fund.

Consulting Projects in Capacity of a University Academic

2020 - 2022 GRDC, leading the UQ review team for the machine learning research at GRDC (Grain Research Development Corporation).

2011 Consulting for Parmalant industries in industrial statistics out of Swinburne University.

Honors and Awards

2008 Abraham Mehrez prize for excellent work of a graduate student in operations research. Awarded for the paper: “The asymptotic variance rate of the output process of finite capacity birth-death queues”.

2007 The Wolf foundation to promote science and art for the benefit of mankind research. Prize for outstanding PhD students.

2001 Award of the Dean of higher education of the University of Haifa for the outstanding M.A. thesis in the name of Yochanan Hoffman.

Published Books

2024 The Mathematical Engineering of Deep Learning (Draft chapters), by Benoit Lique, Sarat Moka, and Yoni Nazarathy.

2021 Statistics with Julia: Fundamentals for Data Science, Machine Learning and Artificial Intelligence, by Yoni Nazarathy and Hayden Klok. 532 pages. Published in Springer Series in the Data Sciences.

Published Book Chapters

2024 Navigating Mathematical Basics: A Primer for Deep Learning in Science, by Benoit Lique, Sarat Moka, and Yoni Nazarathy, to appear in Computational Neurosurgery, edited by Antonio Di Ieva.

2017 Wireless channel selection with restless bandits, by Kuhn, Julia and Nazarathy, Yoni. A book chapter in Markov Decision Processes in Practice, editors: Richard Boucherie, and Nico van Dijk.

Refereed Journal and Conference Articles

2023 Covariance Clustering: Modelling Covariance in Designed Experiments When the Number of Variables is Greater than Experimental Units, by Clayton R Forknall, Arūnas P Verbyla, Yoni Nazarathy, Adel Yousif, Sarah Osama, Shirley H Jones, Edward Kerr, Benjamin L Schulz, Glen P Fox, and Alison M Kelly.

2023 Emerging data inputs for infectious diseases surveillance and decision making, by Aminath Shausan, Yoni Nazarathy, and Amalie Dyda.

2023 The Value of Information and Efficient Switching in Channel Selection, by Jiesen Wang, Yoni Nazarathy, Thomas Taimre. Published in Probability in the Engineering and Informational Sciences.

2022 Emulation of epidemics via Bluetooth-based virtual safe virus spread: experimental setup, software, and data, by Azam Asanjarani, Aminath Shausan, Keng Chew, Thomas Graham, Shane G. Henderson, Hermanus M. Jansen, Kirsty R. Short, Peter G. Taylor, Aapeli Vuorinen, Yuvraj Yadav, Ilze Ziedins, and Yoni Nazarathy. Published in PLOS Digital Health.

2022 Diffusion Parameters of Flows in Stable Multi-class Queueing Networks, by Sarat Moka, Yoni Nazarathy, and Werner Scheinhardt. Published in Queueing Systems.

2022 On Busy Periods of the Critical GI/G/1 Queue and BRAVO, by Y. Nazarathy and Z. Palmowski. Published in Queueing Systems.

2022 Stationary Markovian Arrival Processes: Results and Open Problems, by Azam Asanjarani and Yoni Nazarathy. Published in The ANZIAM Journal.

- 2021** A Novel Implementation of Q-Learning for the Whittle Index, by Lachlan J. Gibson, Peter Jacko, and Yoni Nazarathy. Published in VALUETOOLS 2021: Performance Evaluation Methodologies and Tools.
- 2021** Safe Blues: The case for virtual safe virus spread in the long-term fight against epidemics, by Raj Dandekar, Shane G Henderson, Hermanus M Jansen, Joshua McDonald, Sarat Moka, Yoni Nazarathy, Christopher Rackauckas, Peter G Taylor, and Aapeli Vuorinen. Published in Patterns.
- 2021** A survey of parameter and state estimation in queues, by Azam Asanjarani, Yoni Nazarathy, and Peter Taylor. Published in Queueing Systems.
- 2021** Estimation of semi-Markov multi-state models: a comparison of the sojourn times and transition intensities approaches, by Azam Asanjarani, Benoit Liqueet, and Yoni Nazarathy. Published in The International Journal of Biostatistics.
- 2019** Towards Q-learning the Whittle Index for Restless Bandits, by Jing Fu, Yoni Nazarathy, Sarat Moka, and Peter Taylor. Australian Control Conference, 2019.
- 2017** Scheduling for a processor sharing system with linear slowdown, by Liron Ravner and Yoni Nazarathy. Published in Mathematical Methods of Operations Research.
- 2017** To fish or cut bait?, by Jiahao Diao, Yoni Nazarathy, Thomas Taimre, and Jerzy A Filar. Published in 2017 11th Asian Control Conference (ASCC).
- 2017** Size does matter: a simulation study of hospital size and operational efficiency, by T. Bogomolov, J. A. Filar, R. Luscombe, Y. Nazarathy, S. Qin, P. Swierkowski, and I. Wood. Published in Proceedings-22nd International Congress on Modelling and Simulation, MODSIM 2017.
- 2017** Implementation of energy storage systems for solar PV ramp stabilization, by Ebby Thomas, Rahul Sharma, Yoni Nazarathy. Appears in 2017 Australasian Universities Power Engineering Conference (AUPEC).
- 2015** The challenge of stabilizing control for queueing systems with unobservable server states, by Yoni Nazarathy, Thomas Taimre, Azam Asanjarani, Julia Kuhn, Brendan Patch, Aapeli Vuorinen. Published in 2015 5th Australian Control Conference (AUCC).
- 2015** Performance of faulty loss systems with persistent connections, by Brendan Patch, Thomas Taimre, Yoni Nazarathy. Published in ACM SIGMETRICS Performance Evaluation Review.
- 2015** A dynamic view to moment matching of truncated distributions, by Benoit Liqueet, Yoni Nazarathy. Published in Statistics & Probability Letters.
- 2015** A queueing approximation of MMPP/PH/1, by Azam Asanjarani, Yoni Nazarathy. Appears in International Conference on Queueing Theory and Network Applications.
- 2015** A correction term for the covariance of renewal-reward processes with multivariate rewards, by Brendan Patch, Yoni Nazarathy, and Thomas Taimre. Appears in Statistics & Probability Letters.
- 2015** The intercept term of the asymptotic variance curve for some queueing output processes, by Sophie Hautphenne, Yoav Kerner, Yoni Nazarathy, and Peter Taylor. Appears in European Journal of Operational Research.
- 2015** BRAVO for many-server QED systems with finite buffers, by Daryl J Daley, Johan SH Van Leeuwen, and Yoni Nazarathy. Appears in Advances in Applied Probability.
- 2014** Exploration vs exploitation with partially observable Gaussian autoregressive arms, by Julia Kuhn, Michel Mandjes, Yoni Nazarathy. Published in Proceedings of the 8th International Conference on Performance Evaluation Methodologies and Tools.

- 2014** Architecture and robustness tradeoffs in speed-scaled queues with application to energy management, by Tuan V Dinh, Lachlan LH Andrew, and Yoni Nazarathy. Published in International Journal of Systems Science.
- 2014** Stability of multi-class queueing networks with infinite virtual queues, by Yongjiang Guo, Erjen Lefeber, Yoni Nazarathy, Gideon Weiss, and Hanqin Zhang. Published in Queueing Systems.
- 2013** The age of information in gossip networks, by Jori Selen, Yoni Nazarathy, Lachlan Andrew, and Hai L. Vu. Published in International Conference on Analytical and Stochastic Modeling Techniques and Applications.
- 2013** Linear-quadratic model predictive control for urban traffic networks, by Tung Le, Hai L Vu, Yoni Nazarathy, Bao Vo, and Serge Hoogendoorn. Published in Procedia - Social and Behavioral Sciences.
- 2013** Non-existence of stabilizing policies for the critical push-pull network and generalizations, by Yoni Nazarathy, Leonardo Rojas-Nandayapa, and Thomas S Salisbury. Published in Operations Research Letters.
- 2013** Shortest paths in Stochastic time-dependent networks with link travel
- 2011** The variance of departure processes: puzzling behavior and open problems, by Yoni Nazarathy. Published in Queueing Systems.
- 2011** The asymptotic variance of departures in critically loaded queues, by Ahmad Al Hanbali, Michel Mandjes, Yoni Nazarathy, Ward Whitt. Published in Advances in Applied Probability.
- 2011** Thousand-port optical packet switch architecture with highly distributed control, by S Di Lucente, Y Nazarathy, N Calabretta, O Raz, and HJS Dorren. Published in European Conference and Exposition on Optical Communications.
- 2011** Scalable optical packet switch architecture for low latency and high load computer communication networks, by Nicola Calabretta, Stefano Di Lucente, Yoni Nazarathy, Oded Raz, and Harmen Dorren. Published in 2011 13th International Conference on Transparent Optical Networks.
- 2011** Controllable thousand-port low-latency optical packet switch architecture for short link applications, by S Di Lucente, J Nazarathy, O Raz, N Calabretta, and HJS Dorren. Published in 16th Annual Symposium of the IEEE Photonics Benelux Chapter, December 1-2, 2011, Ghent, Belgium.
- 2010** A fluid approach to large volume job shop scheduling, by Yoni Nazarathy and Gideon Weiss. Published in Journal of Scheduling.
- 2010** Model predictive control for the acquisition queue and related queueing networks, by Johan SH van Leeuwen, Erjen Lefeber, Yoni Nazarathy, Jacobus E Rood. Published in Proceedings of the 5th International Conference on Queueing Theory and Network Applications.
- 2010** Positive Harris recurrence and diffusion scale analysis of a push pull queueing network, by Yoni Nazarathy and Gideon Weiss. Published in Performance Evaluation.
- 2010** Fast and scalable optical packet switch architecture for computer communication networks, by S Di Lucente, Y Nazarathy, O Raz, N Calabretta, HJS Dorren. Published in The 15th Annual Symposium of the IEEE Photonics Benelux 2010, Delft, The Netherlands.
- 2009** Optimal file splitting for wireless networks with concurrent access, by Gerard Hoekstra, Rob Van Der Mei, Yoni Nazarathy, Bert Zwart. Published in NET-COOP 2009: International Conference on Network Control and Optimization.
- 2009** Near optimal control of queueing networks over a finite time horizon, by Yoni Nazarathy, Gideon Weiss. Published in Annals of Operations Research.

2009 A push–pull network with infinite supply of work, by Anat Kopzon, Yoni Nazarathy, and Gideon Weiss. Published in Queueing Systems.

2009 The asymptotic variance rate of the output process of finite capacity birth-death queues, by Yoni Nazarathy, Gideon Weiss. Published in Queueing Systems.

Other Available Articles on Arxiv (etc), not mentioned elsewhere

2024 Nonparametric Testing via Partial Sorting, with K. Bisewski and H.M. Jansen. Appears in arXiv:2210.14546.

2024 Traffic Equations for Fluid Networks with Overflows, by S. Fleuren, H. M. Jansen, E. Lefeber, and Y. Nazarathy. Appears in arXiv:2001.09611.

2020 Safe blues: A method for estimation and control in the fight against covid-19, by Raj Dandekar, Shane G Henderson, Hermanus M Jansen, Sarat Moka, Yoni Nazarathy, Christopher Rackauckas, Peter G Taylor, and Aapeli Vuorinen. Appears in medRxiv 10.1101/2020.05.04.20090258.

Developed Research and Teaching Software

2018 - present Software supporting research papers and books. See:
<https://github.com/yoninazarathy>

2018 - present Several Julia language packages. See:
<https://github.com/yoninazarathy>

2021 Safe Blues (research app on Android):
<https://safeblues.org/>

2018 Epsilon Stream (educational app on iOS):
<https://www.youtube.com/watch?v=4UYNda2K4yA>

2017 Square root marbles (educational app on iOS):
<https://apps.apple.com/au/app/square-root-marbles/id1156046711>

2009 Processor Sharing Fork Join Queueing Network Simulator. V0.1.

2008 The Processing Network Simulator (PRONETSIM). V0.5.

2008 Contributor to the Wolfram Demonstration Project.

2001 The Job Shop Simulation Project (JSSP). V1.2.

Research Student Supervision

PhD Students: Clayton Forknall, Thomas Graham, Zhihao Qiao, Azam Asanjarani, Ebby Thomas, Tuan Dinh.

UQ Mathematics/Statistics Masters Students: Brendan Patch, Jiahao Diao.

UQ Mathematics/Statistics Honours Students: Kyle Young, Matthew Richards, Andrew Liang, Beau White, Alexander Hodges, David Campbell, Riley Vanderbyl.

UQ Engineering Honours Students: Hugh Roberts, Manasa Anantharaman.

UQ Masters of Data Science Project Students: Wei-chung Lai, Alex Yan, Greg Marshall, Yang Leng, Yishan Peng, Yao Chen, Xuerong Wang, Rijul Jain, Leon Bitolkoski, (Julien) Minh Tram Tran, Jingye Liu, Hui Dong, Hoorain Malik, Pallavi Goswami, Taotao Pan.

UQ Masters of Financial Mathematics Students: Yunqian Lin.

Eindhoven Engineering Project Students: Stijn Fleuren, Rick Heuwerker.

UQ Research Project Course Students: Aapeli Vuorinen, Darcy Bermingham, Thomas Graham.

International Student Visitors: Angelique Husson, Nikki Leijnse, Kay Peeters, Liron Ravner, Jiesen Wang, Eric Orjebin.

Further Collaboration with PhD students: Yifan Jiang, Julia Kuhn, Wei Dong, Tung Le, Wala Draid.

Courses Taught

2023, S1/S2 UQ: Inter-semester Programming Boot Camp (Python), Creator, coordinator, and content developer.

2023, S2 UQ: Programming of Simulation, Analysis, and Learning Systems (MATH2504), co-creator, coordinator, and co-lecturer.

2022, S2 UQ: Programming of Simulation, Analysis, and Learning Systems (MATH2504), co-creator, coordinator, and co-lecturer.

2021, S2 UQ: Programming of Simulation, Analysis, and Learning Systems (MATH2504), co-creator, coordinator, and co-lecturer.

2021, S2 UQ: Introduction to Data Science (DATA7001), co-lecturer.

2021, S1 UQ: Introduction to Data Science (DATA7001), coordinator, and co-lecturer.

2021, S1 UQ: Mathematics for Data Science 1 (MATH7501), creator, coordinator, and co-lecturer.

2021, AMSI Summer School: The Mathematical Engineering of Deep Learning, co-creator, coordinator, and co-lecturer.

2020, S2 UQ: Mathematics for Data Science 2 (MATH7502), creator, coordinator, and lecturer.

July 2020, Statistical Society of Australia (6 hours on two days): Workshop: introduction to Julia for statistics and data science, creator and lecturer.

2020, S1 UQ: Mathematics for Data Science 1 (MATH7501), creator, coordinator, and co-lecturer.

2020, S1 UQ: Probability Models & Stochastic Processes (STAT3004/STAT7304), co-creator, coordinator, and lecturer.

2019, S2 UQ: Mathematics for Data Science 2 (MATH7502), creator, coordinator, and lecturer.

2019, S1 UQ: Mathematics for Data Science 1 (MATH7501), creator, coordinator, and lecturer.

2018, S2 UQ: Mathematics for Data Science 2 (MATH7502), creator, coordinator, and lecturer.

2018, S1 UQ: Mathematics for Data Science 1 (MATH7501), creator, coordinator, and lecturer.

2018, S1 UQ: Analysis of Engineering and Scientific Data (STAT2201/CIVL2530), creator, coordinator, and co-lecturer.

2017, Summer Semester UQ: Mathematics & Physics Industry Project (SCIE3255), creator and coordinator.

2017, S2 UQ: Mathematics for Data Science 2 (MATH7502), creator, coordinator, and lecturer.

2017, S1 UQ: Analysis of Engineering and Scientific Data (STAT2201/CIVL2530), creator, coordinator, and co-lecturer.

2016, S2 UQ: Mathematical Control Theory - Linear Systems (MATH4406/MATH7406), coordinator, creator, and lecturer.

2016, S1 UQ: Analysis of Engineering and Scientific Data (STAT2201), coordinator, and co-lecturer.

2016, AMSI Summer School (at RMIT, Melbourne): Linear Control Theory & Structured Markov Chains co-creator, coordinator, and lecturer.

2014, S2 UQ: Mathematical Control Theory - Markov Decision Processes (MATH4406/MATH7406), coordinator, creator, and lecturer.

2013, S1 UQ: Advanced Stochastic Processes II - Diffusion Processes and Stochastic Process Limits (STAT4403), creator, and co-lecturer.

2013, AMSI Summer School (at The University of Melbourne): Structured Markov models and control theory. A unified approach via linear algebra co-creator, coordinator, and co-lecturer.

2012, S2 UQ: Mathematical Control Theory (MATH4406/MATH7406), coordinator, creator, and co-lecturer.

2012, S2 UQ: Analysis of Scientific Data (STAT1201), co-lecturer.

2011, S2 Swinburne: Stochastic Modelling for Engineers, coordinator, creator, and lecturer.

2011, S1 Swinburne: Probability and Statistics for Final Year Engineering Students, coordinator, creator, and lecturer.

2011, S1 Swinburne: Engineering Mathematics: Probability and Statistics for Civil Engineering, co-lecturer.

2010, TU/e, The Netherlands: Basic Mathematics (Calculus), tutor.

2010, TU/e, The Netherlands: Case Study: Assembly Line for Lawn-Mowers, tutor.

2009, The University of Haifa: Interactive Demonstrations of Stochastic and Statistical Models, coordinator, creator, and lecturer.

2009, The University of Haifa: Elements of Operations Research and Forecasting, tutor.

2008, The University of Haifa: Stochastic Processes and Their Applications to Models of Reliability, Inventory and Queueing, coordinator, creator, and lecturer.

2008, The University of Haifa: Introduction to Stochastic Processes, coordinator, creator, and lecturer.

2007, The University of Haifa: Introduction to Stochastic Processes, coordinator, and co-lecturer.

2007, The University of Haifa: Statistical Models B (Experimental Design), coordinator, and co-lecturer.

2006, The University of Haifa: Introduction to Stochastic Processes, coordinator, and co-lecturer.

1999-2002, The University of Haifa and Minhal College, Haifa: Tutoring in multiple courses including Java programming, SAS programming, Unix for users, C programming, Statistics for MBA, Probability for Computer Science, Scheduling and Control, Mathematical Tools for Statistics, Introduction to Stochastic Processes.

Major Conferences, Workshops, and Seminar Organization

2019 Director of the INFORMS-APS bi-annual conference, Brisbane, Australia. Major international conference with satellite events. See: <https://informs-aps.smp.uq.edu.au/>

2013 - 2018 Co-organizer and creator of the Statistics, Modeling and Operations Research seminar series (SMOR) at UQ.

2013 Co-organizer of the Australia and New Zealand Applied Probability Workshop, The University of Queensland.

2012 Co-organizer and creator of the Swinburne, ORGANICS (operations research, games, algorithms, networking, information, control, and statistics) seminar series.

2012 Organizer of an international workshop on optimization, scheduling, and queues in honor of Gideon Weiss, University of Haifa.

2009 Co-organizer of the Young European Queueing Theorists workshop (YEQT III), EURANDOM, Eindhoven University of Technology.

2009 – 2010 Co-organizer of the EURANDOM – QPA (queueing and performance analysis) open problem session.

2007 – 2008 Co-organizer of the University of Haifa, probability and statistics PhD forum.

Major Community Service Activities

2012 - present Engagement activities at UQ for mathematics high school students at teachers.

2013 - 2019 Volunteering for mathematicians in schools.

Major Research Service Activities

Associate editor of Queueing Systems.

Associate editor of Stochastic Models.

Referee for a variety of journals (about 10 referee reports per year).

Referee for granting bodies (Israel, Belgium).

Referee for the Australian Research Council (ARC).

Referee for PhD and MPhil students across Australia (about 1 a year).

Panel member for UQ PhD, Masters, and Honours students (about 5 per year).

Major University Service and Leadership Activities

2018 - present Key contribution to programming education at School of Mathematics and Physics.

2016 - present Serving on hiring committee panels (about 1-2 per year).

2020 - 2022 Data Science Lead, School of Mathematics and Physics. Oversaw the school's part of the Masters of Data Science Program and all other activities related to the Data Science discipline.

2015 - 2019 Industry liaison, School of Mathematics and Physics. Co-created industry internships for credit.

2013 - 2015 Mathematics Honours coordinator, School of Mathematics and Physics.

Popular Media

2023 - present LLM in Practice by Accumulation Point LLM blog posts and term-definitions: a practical collection. <https://www.accumulationpoint.com/blog/>

2018 - 2021 The One on Epsilon Blog post. Weekly posts about popular mathematics.

2021 The conversation, "We've designed a safe 'virtual' epidemic. Spreading it is going to help us learn about COVID".

2021 - 2022 Multiple popular media presentations about Safe Blues. See: <https://safeblues.org/media/>