Yoni Nazarathy

יוני נצרתי

Curriculum Vitae

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Contact Details

e-mail: y.nazarathy@uq.edu.au

office address: Dr. Yoni Nazarathy,
                 The University of Queensland,
                 School of Mathematics and Physics,
                 Brisbane, QLD, 4072,
                 Australia.

Webpage (with links to other web-presence): https://yoninazarathy.com/

Current Position

Associate Professor at the School of Mathematics and Physics (SMP) in the University of Queensland (UQ).

- Conducting research in Data Science (DS).

- Lecturing and course coordinating, including course development.

- DS Lead at SMP including coordination of teaching and research.

- Consulting for industry and research partners.

Condensed Career History

Primary and secondary schooling in both Israel and Palo Alto, California. Three year military service in Israel in combat units. Five years undergraduate and Masters degrees in Economics and Statistics at the University of Haifa as well as software engineering in a professional college in Israel. Five years industry work as a software and algorithm developer, group leader and system engineer in advanced wireless networks. Three and a half years PhD in Applied Probability at the University of Haifa including full lecturing of classes. Two year postdoc in two top Applied Probability centers, EURANDOM and CWI, in Eindhoven and Amsterdam respectively. One and a half years as an Applied Mathematics lecturer at Swinburne University of Technology in Melbourne. Seven months after taking up the lecturing position at the University of Queensland (April 2012), awarded an ARC DECRA fellowship (3 year research focus). Promotion to Senior Lecturer at UQ on Jan 1, 2015. Promotion to Associate Professor at UQ on Jan 1, 2020. Active in industry and entrepreneurship during 2015-2019, with reduced UQ employment for this purpose (80% employment at UQ during 2018-2019).

To date, co-author of a book, "Statistics with Julia", 22 refereed journal publications in high quality journals, 15 refereed conference proceeding papers, and a book chapter. Heavily involved in service to local community, research communities including major conference organization and associate editorship of leading journals.

Main Academic Research Interests and Expertise

Expertise in Machine Learning, Applied Probability, Statistics, Operations Research, Simulation, Scientific Computing, Control Theory, Queueing Theory, Scheduling, and Mathematical Education. Application areas of my work include epidemics, wireless communication networks, bio-statistics, agriculture, power systems, software and hardware design, manufacturing logistics, healthcare logistics, and road traffic networks.

Education

2006 – 2009	University of Haifa. PhD in Applied Probability, Department of Statistics. Dissertation: *On the Control of Queueing Networks and the Asymptotic Variance Rate of Outputs*. Advisor: Prof. Gideon Weiss.
1999 – 2001	University of Haifa. M.A. in Applied Probability (summa cum laude), Department of Statistics. Thesis: *Evaluation of On-Line Scheduling Rules for High Volume Job Shop Problems, a Simulation Study*. Advisor: Prof. Gideon Weiss.
1999 – 2000	Minhal College, Haifa, Software Engineering and Programming Diploma.
1996 – 2000	University of Haifa. B.A. in Statistics and Economics. Complementary mathematics, computer science and electrical engineering courses at the Technion, Israel Institute of Technology.

Previous Major 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).

Industry, Engineering, Consulting and Management Experience

2015 – 2019	Founder and director of One on Epsilon Pty Ltd, a mathematics education startup.
2011 -	Consulting in Data Science and related fields. See also: https://www.accumulationpoint.com/
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).

Major Competitive Research Grants Awarded
(see: http://researchers.uq.edu.au/researcher/2755 for additional minor grants)

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

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.

Research Publications

See updated list of publications here: https://yoninazarathy.com/publications/

See Google Scholar and citations here:
https://scholar.google.com.au/citations?user=Q6aLXDsAAAAJ&hl=en

Key Career Highlights (favourite publications):

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.

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.

2017   Scheduling for a processor sharing system with linear slowdown, by Liron Ravner and Yoni Nazarathy. Published in Mathematical Methods of Operations Research.

2015   A dynamic view to moment matching of truncated distributions, by Benoit Liquet, Yoni Nazarathy. Published in Statistics & Probability Letters.

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.

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

Developed Research and Teaching Software (Available On-line)

See developed software here: https://github.com/yoninazarathy

Research Supervision

See updated list here: https://yoninazarathy.com/student-list/

Courses Taught

See updated list here: https://yoninazarathy.com/courses/

Major Workshop and Conference Organization

2019 – Co-director, initiator and conference organizer for the 2019 INFORMS-APS in Brisbane Australia, https://informs-aps.smp.uq.edu.au/ .

See further organized events here: https://yoninazarathy.com/event-list/

Major Service Activities

See updated list here: https://yoninazarathy.com/

Popular Media

See updated list here: https://yoninazarathy.com/

Additional Maintained websites (associated with several activities)

- https://statisticswithjulia.org/ - Website for the "Statistics with Julia" book.
- https://safeblues.org/ - Website for the Safe Blues project.
- https://deeplearningmath.org/ - Website for The Mathematical Engieering of Deep Learning.
- https://oneonepsilon.com/ - Website for One on Epsilon.