

CURRICULUM VITAE

RAMI ATAR

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Personal

Born: May 4, 1967, Haifa

Citizenship: Israeli

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Academic Degrees

1989 B.Sc. (Summa Cum Laude), Electrical Engineering, Technion

1994 M.Sc., Electrical Engineering, Technion (advisor: Ofer Zeitouni)

1997 D.Sc., Electrical Engineering, Technion (advisor: Ofer Zeitouni)

Employment

Academic appointments

2010- Professor, Department of Electrical Engineering, Technion

2006 Visiting Associate Professor, Department of Statistics, UNC, Chapel Hill

2005-2006 Visiting Associate Professor, Department of Mathematics, University of Washington, Seattle

2004-2010 Associate Professor with Tenure, Department of Electrical Engineering, Technion

2000-2004 Senior lecturer, Department of Electrical Engineering, Technion

1999-2000 Lecturer, Department of Electrical Engineering, Technion

1998-1999 Postdoctoral fellow, The Fields Institute for Research in Mathematical Sciences, Toronto;

Teaching position, Mathematics Department, York University, Toronto

1997-1998 Postdoctoral fellow, Division of Applied Mathematics, Brown University, Providence, RI

Military Service

1989-1994 Engineer and head of a R&D section in the Military Intelligence, IDF

Teaching

Calculus I and II (undergraduate), York University, Toronto
Probability (undergraduate), University of Washington, Seattle
Introduction to digital signal processing (undergraduate), Technion
Random signals (undergraduate), Technion
Signals and systems (undergraduate), Technion
Digital processing of discrete time random signals (graduate), Technion
Stochastic processes (graduate), Technion; Syllabus substantially modified
Optimal control (graduate), Technion
Stochastic models (graduate), Technion
Several ‘advanced topics’ (graduate) courses, including: Asymptotic methods in stochastic networks; Optimal stochastic control; Hamilton-Jacobi-Bellman PDE; Determinantal processes.

Selected Technion Activities

2003–2005, 2010–2012, Organizer of the Technion’s Probability and Stochastic Processes Seminar
2007–2009, Vice chair for student affairs, Department of Electrical Engineering
2014–2016, Vice chair for undergraduate studies, Department of Electrical Engineering
2010–2014, Senate permanent committee on undergraduate and graduate studies, member
2010–2014, Senate member

Selected Professional Activities

Editorial work

2008–2014, Associate editor, *Mathematical Methods of Operations Research*
2009–2012, Associate editor, *Annals of Applied Probability*
2010–2013, Associate editor, *Queueing Systems Theory and Applications*
2010–2013, Associate editor, *Mathematics of Operations Research*
2012–, Associate editor, *Annals of Probability*
2016–, Associate editor, *Applied Mathematics and Optimization*

Grant committees

The Israel Science Foundation (ISF), grant committee member
The German-Israeli Foundation (GIF), scientific advisor

Evaluation committees

Inria Evaluation Committee, member

Membership in Professional Societies

Institute of Mathematical Statistics (IMS), Fellow
Applied Probability Society (APS), Member
INFORMS, Member
AMS, Member
SIAM, Member

Honors

1986, 87, 88, 89 President's List, B.Sc. studies, Technion
1988 Ariel Finci excellence prize for B.Sc. studies
1989 Wolf foundation scholarship for B.Sc. studies
1994 Eliahu and Joyce Jury award for the masters thesis
1996 Ministry of Communications scholarship for the Ph.D. studies
Rothschild Fellowship for post-doctorate for the academic year 1997/8
Plenary lecture, SPA, Osaka 2010
Keynote lecture, YEQT, Eurandom, Eindhoven 2013
2014 Fellow of the IMS. Citation: "For his fundamental contributions in applied and theoretical probability, specifically the analysis and control of stochastic networks and queues."

Graduate Students, Postdocs

Past

Chanit Giat, M.Sc. "Ergodic optimal control for queueing models" (2005)
Nir Solomon, M.Sc. "Optimal scheduling for multi-class costumers in the non-degenerate slowdown regime" (2010)
Asaf Zviran, M.Sc., co-advisor (joint with A. Mandelbaum) "Fork-join networks in heavy traffic: diffusion approximation and control" (2011)
Danielle Levy Jarczun, M.Sc. (without thesis) "Optimal policy computation of the multiclass queue" (2015)
Gal Mendelson, M.Sc. "Control in the large deviations regime for a class of queueing models" (2015)
Gennady Shaikhet, D.Sc., principal advisor (joint with A. Mandelbaum) "Optimal stochastic control of many server queueing systems" (2007)
Chanit Giat, D.Sc., principal advisor (joint with N. Shimkin) "Asymptotic optimality of priority control rules in queueing systems with abandonments" (2011)
Mark Shifrin, D.Sc. (co-advisor: I. Cidon) "Admission and scheduling control in cloud computing: Markov decision processes and diffusion approximations" (2015)
Yair Shaki, Postdoctoral fellow (A. Shwartz and myself) (2010–2011)
Anindya Goswami, Postdoctoral fellow (A. Shwartz and myself) (2011–2012)
Anup Biswas, Postdoctoral fellow (2012–2014)
Asaf Cohen, Postdoctoral fellow (2014–2015)

Current

Michal Asory, M.Sc. (co-advisor: A. Shwartz)

Anat Lev-Ari, D.Sc.

Gal Mendelson, D.Sc. (co-advisor: I. Keslassy)

Subhamay Saha, Postdoctoral fellow

Research Grants

2000–2003, US-Israel Binational Science Foundation (BSF), “Performance and control of stochastic networks: Asymptotic methods”, PI: Rami Atar, Adam Shwartz, Paul Dupuis, Alan Weiss.

2002–2006, Israel Science Foundation (ISF), “Control of many-server queues in heavy traffic”, PI: Rami Atar, Avishai Mandelbaum.

2008–2012, ISF, “Diffusion limits, large deviations and control”, PI: Rami Atar.

2009–2013, BSF, “Blind control of stochastic networks and heavy traffic”, PI: Rami Atar, Amarjit Budhiraja, Adam Shwartz.

2012–2016, ISF, “Topics in stochastic network asymptotics”, PI: Rami Atar.

Presentations

Plenary, keynote, tutorial

1. “On the nondegenerate slowdown diffusion regime for queueing networks in heavy traffic”, 34th Conference on Stochastic Processes and their Applications (SPA 2010). Osaka, September, 2010. Plenary lecture.
2. “Moderate deviation approach to heavy traffic”, Workshop on scheduling and priorities in queueing systems, YEQT VII, Eurandom, Eindhoven, November 2013. Keynote speaker.
3. “Moderate deviations and heavy traffic”, ORSIS 2015, Haifa. Semiplenary tutorial.

Invited talks

1. “Brownian control problems for queueing systems in the Halfin-Whitt regime”. The mathematics of stochastic networks, Eurandom, Eindhoven, The Netherlands, October 29 – November 2, 2001
2. “On Neumann eigenfunctions of some planar domains”. Statistical Society of Canada, Annual Meeting. Hamilton, May 26–29, 2002.
3. “Optimally controlled queueing networks in large deviations regime”. Workshop on modern problems in applied probability. Edinburgh, August 21–29, 2002.
4. “Treelike parallel servers stations in heavy traffic”. INFORMS Atlanta 2003, October 19–22.
5. “Lyapunov exponent for controlled diffusions and queues in heavy traffic”. Conference on stochastic processes and interacting particle systems, Indian Statistical Institute, Delhi 2003, December 12–14.

6. "Queueing systems with many servers: control theory and heavy traffic asymptotics" The workshop on stochastic networks, call center workshop, CRM, Montreal, July 2004.
7. "On constrained singular control of diffusions and related PDE", Seventh Northwest Probability Seminar, Seattle, Oct. 2005
8. "Critically loaded queueing systems that behave as underloaded", INFORMS, Applied Probab., Pittsburgh 2006
9. "Diffusion limit for dynamic routing with random service rates", ORSIS, Maale Hahamisha 2007
10. "Diffusion limit for dynamic routing with random service rates", INFORMS, Applied Probab., Eindhoven 2007
11. "HJB equations, no arbitrage, and generalized Brownian networks", INFORMS, Applied Probab., Eindhoven 2007
12. "Interpolating between the Halfin-Whitt and conventional diffusion regimes", Mathematical Theory of Networks and Systems, Virginia Tech, 2008
13. "A diffusion regime with nondegenerate slowdown", INFORMS, Washington, 2008
14. "Control under model uncertainty in the Halfin-Whitt regime", INFORMS, Washington, 2008
15. "A diffusion regime with nondegenerate slowdown", Valuetools, Athens, 2008
16. "Identifying near optimal trajectories for a game associated with the infinity-Laplacian", Joint Probability Workshop of the Technion and the Budapest University of Technology, January, 2009, Technion, Haifa
17. "The nondegenerate slowdown diffusion regime: limit results and control formulations", International Workshop on Queueing and Stochastic Systems On the Occasion of Conferment of an Honorary Doctorate to Prof. Onno J. Boxma, Haifa, June, 2009
18. "The $c\mu/\theta$ Rule", WITOR-09, Joint Workshop of the Turkish and Israeli Operations Research Societies, Istanbul, September, 2009
19. "The nondegenerate slowdown diffusion regime: limit results and control formulations", The 15th INFORMS Applied Probability Society Conference, Cornell University, July, 2009
20. "The $c\mu/\theta$ rule", INFORMS Annual Meeting, San Diego, October 2009
21. "Control formulations under the nondegenerate slowdown diffusion regime", NET-COOP 2009. November, 2009, EURANDOM, The Netherlands
22. "On the non-degenerate slowdown diffusion regime", ORSIS, Nir-Etsyon, June 2010
23. "Asymptotically optimal dynamic pricing for network revenue management", International Workshop on Applied Probability (IWAP), Madrid, July 2010.

24. “On the non-degenerate slowdown diffusion regime”, Annual IMS meeting. Gothenburg, August 2010.
25. “On many-server limits of the parallel server model”, ORSIS, Acco, June 2011
26. “Optimal control at equilibrium for the parallel server model via measure valued fluid limits”, APS Conference, Stockholm, July 2011
27. “A differential game for a resource allocation problem”, Variational and Optimal Control Problems on Unbounded Domains, Workshop dedicated to the memory of A. Leizarowitz, Technion, January 2012
28. “The $c\mu$ rule in ordinary, moderate and large deviation regimes”, Workshop in honor of G. Weiss, Haifa University, June 2012
29. “Control of queueing systems in the moderate and large deviation regime”, Stochastic Networks Conference, MIT, June 2012
30. “Three new state space collapse results for the multiclass G/G/1 queue”, Appl. Probab. Soc. workshop, San Jose, Costa Rica 2013
31. “An in finite-dimensional Skorohod map and continuous parameter priority”, joint Technion-HKUST workshop, Industrial Engineering & Management, Technion, May 2014
32. “On an infinite dimensional Skorohod map and continuous parameter priority”, IMS Annual meeting, Sydney, July 2014
33. “The Skorohod map and priority”, Stochastic Processes and Random Fields: Geometry and Fine properties, A workshop in honor of Robert Adler’s and Haya Kaspi’s 35th year at the Technion (2015)
34. “The Skorohod map and priority”, Euro Operations Research Society, Vienna (2015)
35. “Sensitive heavy traffic limits” INFORMS, Philadelphia 2015
36. TBA. Stochastic Networks Conference, San Diego (2016)
37. TBA. World Congress of Probability and Statistics, Toronto (2016)

Conference Activities

Invited Organized Sessions

1. “Fluid and diffusion limits for queueing systems”, ORSIS, Maale Hahamisha 2007
2. “Control and partial differential equations”, INFORMS, Applied Probability Conference, EURANDOM, Eindhoven 2007
3. “Recent asymptotic methods in queueing”, Valuetools, Athens 2008

4. “Diffusion scale and control”. The 15th INFORMS Applied Probability Society Conference, Cornell University, Ithaca, New York, to be held July, 2009
5. TBA. INFORMS Annual Meeting, Applied Probability Cluster, Austin, TX, November 7–10, 2010
6. “Dynamic control of queueing systems”, APS Conference, July, 2011, Stockholm
7. “Control and asymptotics for queueing systems” and “Control of heavily loaded queueing systems”, APS Conference, July, 2011, Stockholm
8. “Stochastic control” IWAP, Jerusalem, June 2012