Reza Aghajani

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Division of Applied Mathematics, Box F,
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RESEARCH INTEREST

Probability Theory, Stochastic Analysis and applications, Measure-valued Processes, Stochastic Networks.

EDUCATION

Brown University, Providence, RI, USA

- PhD Candidate, Applied Mathematics (expected) May 2016
  Dissertation title:*Infinite-Dimensional Scaling Limits of Stochastic Networks.*
- Master of Science, Applied Mathematics May 2011

Carnegie Mellon University, Pittsburgh, PA, USA

- Master of Science, Electrical Engineering May 2010

Sharif University of Technology, Tehran, Iran

- Bachelor of Science, Electrical Engineering May 2008
- Bachelor of Science, Mathematics May 2008

HONORS AND AWARDS

- Recipient of Brown University Dissertation Fellowship, 2015.
- Recipient of the Sigma Xi award, Brown University, 2014.
- Ranked 58th amongst more than 400'000 participants in Iran's nationwide university entrance exam, 2003.
- Silver medalist of Iran's National Physics Olympiad, 2002.
- Travel Support: Brown Univ. International Travel Fund (APS Conference, Jun 2015 and summer research travel, June 2014); Seminar on Stochastic Processes (April 2015 and March 2014); Travel support for AMS Joint Mathematical Meetings (Jan 2015), Brown Univ. Graduate School (INFORMS Annul meetings, Nov 2015, Nov 2014, and Oct 2013.)

PUBLICATION

Preprints

- R. Aghajani and K. Ramanan. *Ergodicity of an SPDE Associated with a Many-Server Queue.* Preprint, 2015.
- R. Aghajani and K. Ramanan. *The Limit of Stationary Distributions of Many-Server Queues in the Halfin-Whitt Regime.* Working paper, 2015.
- R. Aghajani and K.Ramanan. *The Hydrodynamic Limit of a Randomized Load Balancing Network.* Preprint, 2015.
- R. Aghajani, Xingjie Li and K.Ramanan. *Mean-field Dynamics of Load-Balancing Networks with General Service Distributions.* (conference version), submitted, 2015. [PDF]

Published

- R. Aghajani, L. Parolini, B. Sinopoli, *Dynamic Power Allocation in Server Farms: a Real Time Optimization Approach*, 49th IEEE Conference on Decision and Control. Atlanta, GA. Dec. 2010.
- A. Khonsari, R. Aghajani, A. Tavakkol, M.S. Talebi, *Mathematical Analysis of Buffer Sizing for Network-on-Chips under Multimedia Traffic.* ICCD 2008: 150-155.
- A. Dadlani, A. Khonsari, R. Aghajani, A. Rajabi. *QoS Behavior of Optical Burst Switching under Multimedia Traffic: an Analytical Approach.* IPCCC 2008: 335-342.

LONG-TERM VISITS AND WORKSHOPS

New Challenges in PDE: Deterministic Dynamics and Randomness in High and Infinite Dimensional Systems, MSRI, Berkeley, CA, Fall 2015.

- Program Associate from Aug 17 to Sep 7. Attended the Introductory Workshop: Randomness and long time dynamics in nonlinear evolution differential equations.

Project RAP, INRIA Paris-Rocquencourt, France, Summer 2014.

- Visiting Researcher, Networks, Algorithms and Probability (RAP) group. Analysis of multi-scale network models, in collaboration with Philippe Robert.

Computational Challenges in Probability, ICERM, Providence, RI, Fall 2012.

- Participant of the semester-long program including workshops and tutorials on Bayesian Nonparametrics, Uncertainty Quantification, and Monte Carlo Methods.

CONFERENCES AND PRESENTATIONS

Oral Presentations:

- INFORMS Annual Meeting, invited speaker, *The PDE Method for Randomized Load Balancing Networks,* Philadelphia, PA, 2015.
- INFORMS Applied Probability Society Conference, *A Diffusion Approximation for the Stationary Distribution of a Many-Server Queueing System in the Halfin-Whitt Regime*, Istanbul, Turkey, 2015.
- Division of Applied Mathematics Probability Seminar, *The PDE Method for Randomized Load Balancing Networks.* Brown University, Providence, RI, 2015.
- Division of Applied Mathematics Graduate Seminar, *The ODE and PDE methods in Random Graphs and Networks,* Brown University, Providence, RI, 2015.
- INFORMS annual meeting, invited speaker, *Hydrodynamic Limits for Randomized Load Balancing*, San Francisco, CA, 2014.
- INFORMS annual meeting, *A Diffusion Approximation for the Steady State Characterization of a G/G/N Queueing Systems in the Halfin-Whitt Regime*, Minneapolis, MN, 2013.
- Division of Applied Mathematics Math Slam, *Asymptotic Analysis of Large Scale Systems,* Brown University, Providence, RI, 2013.
- ICERM workshop on Computational Challenges in Probability, *Asymptotic Coupling with Applications in Queuing Systems,* Providence, RI, 2012.

Posters:

- Seminar on Stochastic Processes, *Hydrodynamic limits for Randomized Load Balancing*, Newark, DE, 2015.
- Seminar on Stochastic Processes, *Asymptotic Coupling of an SPDE with Applications to Many-Server Queues*, San Diego, CA, 2014.
- NSF CMMI grantee conference, *Analysis of Large-Scale Stochastic Systems,* Boston, MA, 2012.

TEACHING AND MENTORSHIP EXPERIENCES

Mentorship

- Co-mentor of Undergraduate Honors Thesis: Katrina Kardassakis, *Load Balancing in Stochastic Networks: Algorithms, Analysis, and Game Theory*, 2014.
- Co-mentor of Independent Study and ongoing Undergraduate Honors Thesis: Eric Hu, *Power of Two Choices with General Service Distribution*, 2015.

Teaching

- Recipient of *Teaching Certificate I*, One-year program on reflective teaching offered by the Sheridan Center for Teaching and Learning at Brown University.
- Teaching assistant for *Statistical Inference I* (2012) and *Probability Theory* (2011, graduate level) at Brown University, *Networked Control* (2010) at Carnegie-Mellon University, *Engineering Probability and Statistics* (2007) and *Probability and Applications* (2007) at Sharif University of Technology.