Aditya Gopalan

CONTACT

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DATE OF BIRTH

19/6/1983

RESEARCH INTERESTS

Learning Algorithms, Communication Networks, Performance Modeling and Analysis, Stochastic Control

EDUCATION

The University of Texas at Austin *September 2011*

- **Ph.D.**, Electrical and Computer Engineering
- Dissertation: *Wireless Scheduling with Limited Information*

Indian Institute of Technology Madras *July 2006*

- **B.Tech.** & **M.Tech.**, Electrical Engineering
- Dissertation: *Space-Time Block Codes from Field Extensions – Design and Detection*

AWARDS AND HONORS

INSPIRE Young Faculty Award *July 2014*
Five-year faculty grant (2014-2019) by the Department of Science & Technology, Government of India.

Andrew and Erna Finci Viterbi Fellowship, 2012 *April 2012*
Department of Electrical Engineering, Technion, Haifa, Israel.

WORK EXPERIENCE

The Technion, Haifa, Israel *November 2011-March 2014*
Postdoctoral research scholar in the Department of Electrical Engineering. Worked on developing online algorithms for decision-making in dynamic and complex environments. Host: Prof. Shie Mannor.

Microsoft Research, Redmond, USA *September 2013*
Visiting researcher at the Extreme Computing Research Group. Involved with performance modeling and analysis of large-scale datacenter networks. Host: Ishai Menache

Technion-Microsoft Electronic Commerce Research Center, Haifa, Israel *November 2011-present*
Modelling and design of dynamic pricing and resource allocation schemes for large-scale cloud computing services. Collaborators: Shie Mannor (Technion), Nahum Shimkin (Technion), Ishai Menache (Microsoft Research, USA).

Wireless Communications and
Networking Group, UT Austin, USA *August 2006-September 2011*

Graduate Research Assistant, developed wireless scheduling algorithms that perform well under partial network state information, studied optimal information spread over large networks with long-range virtual mobility. Advisors: Sanjay Shakkottai, Constantine Caramanis.

Qualcomm Inc., San Diego, USA *May 2009-July 2009*

Summer intern at the Qualcomm Corporate Research and Development Center. Assisted in design and testing of MAC layer protocols for short-range wireless systems.

Dept. of Electrical Engineering, IIT Madras *July 2005-May 2006*

Advisor: Srikrishna Bhashyam
Developed a decoder for space-time block codes based on algebraic field extensions.

Tata Institute of Fundamental Research, Pune *May-July 2004*

Advisor: Narendra Karmarkar
Summer intern, developed formulations for large-scale combinatorial sphere-packing problems.

PUBLICATIONS

Journal Articles/Preprints:

- Aditya Gopalan and Shie Mannor, "Thompson Sampling for Learning Parameterized MDPs", preprint, arXiv:1406.7498, 2014.
- Aditya Gopalan, Constantine Caramanis and Sanjay Shakkottai, "Wireless Scheduling with Partial Information: Large Deviations and Optimality", preprint, arXiv:1405.6307, 2014.
- Siddhartha Banerjee, Aditya Gopalan, Abhik Das and Sanjay Shakkottai, "Epidemic Spreading with External Agents", *IEEE Transactions on Information Theory, 2014*.
- Aditya Gopalan, Constantine Caramanis and Sanjay Shakkottai, "On the Value of Coordination and Delayed Queue Information in Multicellular Scheduling", *IEEE Transactions on Automatic Control, Vol. 58(6), June 2013*.
- Akula Aneesh Reddy, Siddhartha Banerjee, Aditya Gopalan, Sanjay Shakkottai and Lei Ying, "On Distributed Scheduling with Heterogeneously Delayed Network-State Information", *Queueing Systems: Theory and Applications (QUES), Vol. 72, June 2012*.
- Aditya Gopalan, Constantine Caramanis and Sanjay Shakkottai, "Wireless Scheduling with Partial Channel-state Information", *IEEE Transactions on Information Theory, Vol. 58(1), January 2012*.

Conferences/Workshops:

- Aditya Gopalan, Shie Mannor and Yishay Mansour, "Thompson Sampling for Conplex Online Problems", *Proc. International Conference on Machine Learning (ICML), Beijing, 2014.*.

- Aditya Gopalan, Shie Mannor and Yishay Mansour, "Complex Bandit Problems and Thompson Sampling", *Proc. First Multidisciplinary Conference on Reinforcement Learning and Decision Making, Princeton, NJ, USA, 2013*.
- Aditya Gopalan, Constantine Caramanis and Sanjay Shakkottai, "Low-delay Wireless Scheduling with Partial Channel-state Information", *Proc. IEEE INFOCOM, Orlando, USA, 2012*.
- Ioannis Mitliagkas, Aditya Gopalan, Constantine Caramanis and Sriram Vishwanath, "User Rankings from Comparisons: Learning Permutations in High Dimensions", *Allerton Conference on Communications, Control and Computing, Monticello, Illinois, 2011*.
- Aditya Gopalan, Siddhartha Banerjee, Abhik Das and Sanjay Shakkottai, "Random Mobility and the Spread of Infection", *Proc. IEEE INFOCOM, Shanghai, China, 2011*.
- Akula Aneesh Reddy, Siddhartha Banerjee, Aditya Gopalan, Sanjay Shakkottai and Lei Ying, "Wireless Scheduling with Heterogeneously Delayed Network-State Information", *Allerton Conference on Communications, Control and Computing, Monticello, Illinois, 2010*.
- Aditya Gopalan, Constantine Caramanis and Sanjay Shakkottai, "On the Value of Coordination and Delayed Queue Information in Multicellular Scheduling", *Information Theory and Applications Workshop, San Diego, California, 2010*.
- Aditya Gopalan, Constantine Caramanis and Sanjay Shakkottai, "On Wireless Scheduling with Partial Channel-state Information", *Allerton Conference on Communications, Control and Computing, Monticello, Illinois, 2007*.
- Aditya Gopalan and Srikrishna Bhashyam, "A Multiple Lattice Reduction Based Detector for Space Time Block Codes based on Cyclotomic Extensions", *Allerton Conference on Communications, Control and Computing, Monticello, Illinois, 2006*.

Professional Service

- Workshop Chair, *Mobihoc 2013 - The 14th International Symposium on Mobile Ad Hoc Networking and Computing*, July 2013, Bangalore, India. Solicited, coordinated and put together a programme of workshops pertaining to ad-hoc and mobile networking co-located with the main conference.
- Reviewer, *IEEE Transactions on Information Theory*, *International Conference on Machine Learning (ICML)*, *Conference on Learning Theory*, *Neural Information Processing Systems*, *IEEE Transactions on Automatic Control*, *IEEE Transactions on Secure and Dependable Computing*, *IEEE Transactions on Wireless Communication*, *IEEE/ACM Transactions on Networking*, *Queueing Systems*, *IEEE INFOCOM*, *ACM Mobihoc*, *IFIP Performance*.

Teaching Experience

E1 245 - Online Prediction & Learning *Fall 2014*

3-credit graduate course in sequential decision making at IISc Bangalore
Course webpage: `http://www.ece.iisc.ernet.in/~aditya/E1245_F14.html`

048717 - Statistical Signal & Image Analysis *Spring 2013*

Grader, Department of Electrical Engineering, Technion.

EE 302 - Intro. to Electrical & Computer Engg. *Fall 2006*

Tutor and Teaching Assistant for first-year honors undergraduate class, Department of Electrical and Computer Engineering, UT Austin.

EC 204 - Networks and Systems *Fall & Spring 2005*

Teaching Assistant for second-year undergraduate class, Department of Electrical Engineering, IIT Madras.