Virag Shah

Postdoctoral Researcher
Microsoft Research - Inria Joint Centre
Palaiseau, France

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Education

The University of Texas at Austin 2015
Ph.D. in Electrical and Computer Engineering
Advisor: Prof. Gustavo de Veciana

Indian Institute of Science (IISc), Bangalore 2009
Master of Engineering in Telecommunications
Advisor: Prof. Neelesh B. Mehta

Mumbai University 2007
Bachelor of Engineering in Electronics

Research Interests

- System optimization and algorithm design for scalable cloud computing systems
- Active matching algorithms for two-sided markets
- Applied queueing theory

Research Experience

Microsoft Research - Inria Joint Centre Palaiseau, France
Postdoctoral Researcher Jan 2016 – present
Hosts: Drs. Laurent Massoulié, Marc Lelarge, and Milan Vojnović

The University of Texas at Austin Austin, TX
Simons Postdoctoral Fellow Fall 2015
Host: Prof. François Baccelli

The University of Texas at Austin Austin, TX
MCD Fellow, Graduate Research Assistant Aug 2010 – Jul 2015
Advisor: Prof. Gustavo de Veciana

Alcatel Lucent Bell Labs Crawford Hill, NJ
Research Intern Summer 2013
Mentors: Dr. Murali Kodialam and Dr. T. V. Lakshman

Indian Institute of Technology, Bombay Mumbai, Maharashtra
Research Fellow Nov 2009 – Jul 2010
Mentors: Prof. D. Manjunath and Prof. Bikash K. Dey

Indian Institute of Science, Bangalore, Bengaluru, Karnataka
Graduate Researcher Aug 2007 – Jul 2009
Advisor: Prof. Neelesh B. Mehta

Awards

- **Best Paper Award, IEEE INFOCOM 2014** at Toronto, Canada. One of two papers selected (tied) from the 1650 papers submitted, and 313 papers accepted to the conference.
- **MCD Fellowship** at The University of Texas at Austin, 2010-11. Awarded to about top 1% applicants at the graduate school.
- **Best Paper Award, National Conf. on Communications 2010** at IIT Madras, India in communications track. 250 papers submitted, and 105 accepted to conference with 48 in communications track.

Journal Publications

- **V. Shah**, G. de Veciana, and G. Kesidis "A stable approach for routing queries in unstructured P2P networks," *IEEE/ACM Trans. on Networking* (ToN), Oct. 2016.
- **V. Shah** and G. de Veciana, "Impact of fairness and heterogeneity on delays in large-scale content delivery networks," *Queuing Systems* (QUESTA), Aug. 2016.
- **V. Shah** and G. de Veciana, "Asymptotic independence of servers' utilization in queuing systems with limited resource pooling," *Queuing Systems* (QUESTA), Jun. 2016.
- **V. Shah** and G. de Veciana, "High performance centralized content delivery infrastructure: models and asymptotics," *IEEE/ACM Trans. on Networking* (ToN), Oct. 2015.
- **V. Shah**, B. K. Dey, and D. Manjunath, "Network flows for functions," *IEEE J. on Selected Areas in Comm.* (JSAC) Special Issue on In-Network Computation, Mar. 2013.
- **V. Shah**, N. B. Mehta, and R. Yim, "Optimal timer based selection schemes," *IEEE Trans. on Comm.* (TCOM), Jun. 2010.
- **V. Shah**, N. B. Mehta, and R. Yim, "Splitting algorithms for fast relay selection: Generalizations, analysis, and a unified view," *IEEE Trans. on Wireless Comm.* (TWC), Apr. 2010.
- **V. Shah**, N. B. Mehta, and R. Yim, "The relay selection and transmission tradeoff in cooperative communication systems," *IEEE Trans. on Wireless Comm.* (TWC), Aug. 2010.

Peer-reviewed Conference Publications

- **V. Shah** and G. de Veciana "Impact of fairness and heterogeneity on delays in large-scale content delivery networks," in ACM SIGMETRICS, Jun. 2015.
- **V. Shah** and G. de Veciana "Performance evaluation and asymptotics for content delivery networks," in IEEE INFOCOM, Apr. 2014.
- **V. Shah**, G. de Veciana, and G. Kesidis, "Learning to route queries in unstructured P2P networks: Achieving throughput optimality subject to query resolution constraints," in IEEE INFOCOM, Mar. 2012.
- **V. Shah**, B. K. Dey, and D. Manjunath, "Network flows for functions," in IEEE International Symposium of Information Theory (ISIT), Aug. 2011.
- **V. Shah**, B. K. Dey, and D. Manjunath, "Efficient flow allocation algorithms for in-network function computation," in IEEE GLOBECOM, Dec. 2011.
- **V. Shah**, N. B. Mehta, and R. Yim, "A complete characterization of an optimal timer based selection scheme," in IEEE International Conference on Communications (ICC), May 2010.
- A. S. Teertha, N. B. Mehta, **V. Shah**, "On optimal timer-based distributed selection for rate-adaptive multi-user diversity systems," National Conference on Communications (NCC), India, Jan. 2010.
- **V. Shah**, N. B. Mehta, and R. Yim, "Analysis, insights and generalization of a fast decentralized relay selection mechanism," in IEEE International Conference on Communications (ICC), Jun. 2009.
- **V. Shah**, N. B. Mehta, and R. Yim, "Relay selection and data transmission throughput tradeoff in cooperative systems," in IEEE GLOBECOM, Dec. 2009.

Publications in the works

- T. Bonald, C. Comte, **V. Shah**, G. de Veciana, "Poly-symmetry in processor-sharing networks," submitted.
- **V. Shah**, A. Bouillard, F. Baccelli, "Leveraging coding and data dissemination in cloud clusters."
- **V. Shah**, Laurent Massoulie, Marc Lelarge, Lennart Gulikers, Milan Vojnovic, "Active matching algorithms for two-sided markets with limited feedback."

Teaching Experience

Probability and Stochastic Processes Fall 2013
Teaching Assistant, The University of Texas at Austin
Instructor: Prof. Gustavo de Veciana

Professional Service

Publicity Co-chair, ACM Mobihoc 2017
Co-organizer, Simons Seminar Series for Fall 2015, UT Austin
Reviewer at journals IEEE/ACM Trans. on Networking (ToN), Queueing Systems (QUESTA) and IEEE J.

on Selected Areas in Comm. (JSAC), and at several conferences such as International Teletraffic Congress (ITC), IEEE International Symposium on Information Theory (ISIT), WiOpt, etc.

References

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Prof. Gustavo de Veciana
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Dr. Laurent Massoulié
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