

# Virag Shah

Postdoctoral Researcher  
Microsoft Research - Inria Joint Centre  
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## EDUCATION

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<b>The University of Texas at Austin</b> Ph.D. in Electrical and Computer Engineering Advisor: Prof. Gustavo de Veciana	2015
<b>Indian Institute of Science (IISc), Bangalore</b> Master of Engineering in Telecommunications Advisor: Prof. Neelesh B. Mehta	2009
<b>Mumbai University</b> Bachelor of Engineering in Electronics	2007

## RESEARCH INTERESTS

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

## RESEARCH EXPERIENCE

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<b>Microsoft Research - Inria Joint Centre</b> <i>Postdoctoral Researcher</i> Hosts: Drs. Laurent Massoulié, Marc Lelarge, and Milan Vojnović	Palaiseau, France Jan 2016 – present
<b>The University of Texas at Austin</b> <i>Simons Postdoctoral Fellow</i> Host: Prof. François Baccelli	Austin, TX Fall 2015
<b>The University of Texas at Austin</b> <i>MCD Fellow, Graduate Research Assistant</i> Advisor: Prof. Gustavo de Veciana	Austin, TX Aug 2010 – Jul 2015
<b>Alcatel Lucent Bell Labs</b> <i>Research Intern</i> Mentors: Dr. Murali Kodialam and Dr. T. V. Lakshman	Crawford Hill, NJ Summer 2013
<b>Indian Institute of Technology, Bombay</b> <i>Research Fellow</i> Mentors: Prof. D. Manjunath and Prof. Bikash K. Dey	Mumbai, Maharashtra Nov 2009 – Jul 2010
<b>Indian Institute of Science, Bangalore,</b> <i>Graduate Researcher</i> Advisor: Prof. Neelesh B. Mehta	Bengaluru, Karnataka Aug 2007 – Jul 2009

## AWARDS

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- **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

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- **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 D. Bethanabhotla, “Performance of a Fast, Distributed Multiple Access Based Relay Selection Algorithm Under Imperfect Statistical Knowledge,” *IEEE Trans. on Wireless Comm.* (TWC), Oct. 2011.
- **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.
- **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.

## PEER-REVIEWED CONFERENCE PUBLICATIONS

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- **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, “Relay selection and data transmission throughput tradeoff in cooperative systems,” in IEEE GLOBECOM, Dec. 2009.
- **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.

## PUBLICATIONS IN THE WORKS

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- 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**, Lennart Gulikers, Laurent Massoulie, Marc Lelarge, Milan Vojnovic, “Active matching algorithms for two-sided markets with limited feedback.”

## TEACHING EXPERIENCE

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### Probability and Stochastic Processes

Fall 2013

Teaching Assistant, The University of Texas at Austin  
Instructor: Prof. Gustavo de Veciana

## PROFESSIONAL SERVICE

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- 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. François Baccelli  
Simons Chair, Dept. Math. and ECE  
The University of Texas at Austin  
Austin, Texas, USA  
`baccelli@math.utexas.edu`

Prof. Gustavo de Veciana  
Professor, Dept. of ECE  
The University of Texas at Austin  
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Dr. Laurent Massoulié  
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