# ABISHEK SANKARARAMAN


CONTACT INFORMATION

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INTERESTS

Machine Learning, Multi-Agent Systems, Random Graphs and Social Networks, Randomized Algorithms, Distributed Algorithms

EDUCATION

**The University of Texas at Austin**
*Ph.D. in Electrical and Computer Engineering* — Jan. 2013 - Present

- Advisor: François Baccelli

**Indian Institute of Technology, Madras**
*B.Tech in Electrical Engineering*
*M.Tech in Communication Systems and Signal Processing*
*Minor in Mathematics* — 2008 - 2013

- Graduated ranked $1^{st}$ in the Department.

WORK EXPERIENCE

**Wireless Networking and Communications Group (WNCG), UT Austin** — Austin, TX
Graduate Research Assistant. Advisor: François Baccelli — Jan 2014-Present

**Simons Center for Network Mathematics** — Austin, TX
Graduate Research Assistant. Advisor: François Baccelli — Jan 2014-Present

**Huawei Research Labs** — Santa Clara, CA
Data Science Intern. Manager: Hui Zang — May - Aug, 2015

PUBLICATIONS

*Social Learning in Multi-Agent Multi-Armed Bandit Problem*
A. Sankararaman, Ayalvadi Ganesh and Sanjay Shakkottai
Under Submission. Paper available on request.

*Interference Queuing Networks on Grids*
A. Sankararaman, François Baccelli and Sergey Foss
Forthcoming in Annals of Applied Probability.

*Community Detection on Euclidean Random Graphs*
A.Sankararaman, Emmanuel Abbe and François Baccelli
In ACM-SIAM Symposium on Discrete Algorithms (SODA), 2018.
Extended Abstract in Allerton, 2017.

*Spatial Birth-Death Wireless Networks*
A.Sankararaman and François Baccelli
In IEEE Transactions on Information Theory, 2017.
Extended Abstract in Allerton 2016.

*Performance-Oriented Association in Large Cellular Networks with Technology Diversity*
A.Sankararaman, Jeong woo Cho and François Baccelli
In International Teletraffic Congress (ITC), 2016.

*CSMA k-SIC: A class of distributed MAC protocols and their performance evaluation*
A.Sankararaman and François Baccelli
In IEEE Conference on Computer Communications (INFOCOM), 2015.

WORKING PAPERS

*Haplotype Phasing Through Euclidean Community Detection*
with H. Vikalo and F. Baccelli

*Distributed Bandit Algorithms in a Dynamic Changing Environment*
with R. Chawla, S. Shakkottai and A. Ganesh

## Teaching and Mentorship

Teaching Assistant, *Advanced Probability - Inference and Learning*
*The University of Texas at Austin* Spring 2018

Duties include holding office hours, setting homework and exam problems.

Undergraduate Student Mentor - *Mixing Times for Random Walks on Groups*
*Primary mentor for an undergraduate student project in the Mathematics Department* Spring 2018

My main duty is to propose a research topic to the student and then aid in executing it. We decided to study mixing times for random walks on groups, in particular the cutoff-phenomenon. At the end of the project, the student is expected to give a public seminar on the project.

## Talks and Presentations

- *Interference Queuing Networks on Grids*
  Talk at UNC-Chapel Hill Probability Seminar, Chapel Hill, NC. Feb 2019
  Talk at Austin-TAMU Probability Seminar, Austin, TX. May 2018
  Talk at Heriot-Watt University, Edinburgh UK Feb 2018

- *Community Detection on Euclidean Random Graphs*
  Talk at MIT Research Laboratory of Electronics, Cambridge MA Dec 2018
  Talk at University of Massachusetts, Amherst, MA Dec 2018
  Talk at Indian Institute of Technology Madras, Chennai Jan 2018
  Talk at ACM-SIAM SODA Conference, New Orleans, LA Jan 2018
  Talk at The University of Texas at Austin May 2017

- *Spatial Birth Death Process on the Continuum*
  Talk at Indian Institute of Technology Madras, Chennai Jan 2017
  Talk at Princeton University Nov 2016
  Talk at Allerton Conference on Communication Control and Computing Oct 2016
  Talk at INRIA - Ecole Normale Supérieure, Paris Sep 2016

- *Technology Diversity - A Framework for Base Station Association in Large Cellular Networks*
  Talk at 28th, International Teletraffic Congress (ITC-28), Würzburg, Germany Sep 2016

- *CSMA k-SIC: A Class of MAC Protocols*
  Talk at IEEE INFOCOM, Hong Kong May 2015

## Professional Services

- Reviewer for IEEE ISIT (International Symposium on Information Theory) 2019
- Reviewer for Queueing Systems Journal 2019
- Reviewer for ACM-SIAM SODA (Symposium on Discrete Algorithms) 2019
- Reviewer for IEEE FOCS (Foundations of Computer Science) 2018
- Reviewer for SpaSWIN (Spatial Stochastic Models for Wireless Networks) 2018
- Reviewer for Performance Evaluation 2017
- Reviewer for IEEE Transactions on Information Theory 2016
- Reviewer for IEEE Transactions on Wireless Communications 2015-2019

## References

On Request