

Jithin K. Sreedharan

Postdoctoral research associate

NSF Center for Science of Information, Purdue University, USA

232 Pierce St, Apt 19
West Lafayette, IN 47906, USA

+1 631 746-1939
✉ jithinks@purdue.edu
📄 jithin-k-sreedharan.github.io

Research interests Network science, Statistical inference, Probabilistic modelling

Education

- Aug 2013 - **Doctor of Philosophy**,
Dec 2016 *INRIA at Sophia Antipolis and INRIA-Bell Labs joint lab*, France.
Advisor: Dr. Konstantin Avrachenkov
Title of the thesis: Sampling and Inference in Complex Networks
Specialization: Random walks on graph, Spectral graph theory, Experiments on real-world networks
- Aug 2009 - **Master of Science (Engineering)**,
Aug 2012 *Dept. of Electrical Communication Engg., Indian Institute of Science (IISc)*, Bangalore.
Advisor: Prof. Vinod Sharma
Title of the thesis: Spectrum sensing in Cognitive Radios using distributed sequential detection
Specialization: Statistical inference, Information theory, Telecommunication

Publications

**Corresponding author, alphabetical author-list*

- 1 Konstantin Avrachenkov, Vivek S. Borkar, Arun Kadavankandy and **Jithin K. Sreedharan***, “Revisiting Random Walk based Sampling in Networks: Evasion of Burn-in Period and Frequent Regenerations”, *submitted*
- 2 Abram Magner, **Jithin K. Sreedharan**, Ananth Grama, and Wojciech Szpankowski, “TIMES: Temporal Information Maximally Extracted from Structures”, *Accepted in ACM International Conference on World Wide Web (WWW) 2018* (acceptance rate: 14.8%)
- 3 Konstantin Avrachenkov, Philippe Jacquet and **Jithin K. Sreedharan***, “Hamiltonian System Approach to Eigenvalue-Eigenvector Problem in Networks”, *IEEE International Workshop on Multidimensional (nD) Systems (nDS) 2017*
- 4 Abram Magner, Ananth Grama, **Jithin K. Sreedharan** and Wojciech Szpankowski, “Recovery of Vertex Orderings in Dynamic Graphs”, *IEEE International Symposium on Information Theory (ISIT) 2017*
- 5 Konstantin Avrachenkov, Bruno Ribeiro and **Jithin K. Sreedharan***, “Inference in OSNs via Lightweight Partial Crawls”, *ACM SIGMETRICS / PERFORMANCE 2016* (acceptance rate: 13.5%)
- 6 Konstantin Avrachenkov, Philippe Jacquet and **Jithin K. Sreedharan***, “Distributed Spectral Decomposition in Networks by Complex Diffusion and Quantum Random Walk”, *IEEE International Conference on Computer Communication (INFOCOM) 2016* (acceptance rate: 18.25%)
- 7 Konstantin Avrachenkov, Vivek S. Borkar, Arun Kadavankandy and **Jithin K. Sreedharan***, “Comparison of random walk based techniques for estimating network averages”, *5th International Conference on Computational Social Networks (CSoNet) 2016*
- 8 Konstantin Avrachenkov, Natalia M. Markovich and **Jithin K. Sreedharan***, “Distribution and Dependence of Extremes in Network Sampling Processes”,
 - *Computational Social Networks (Springer International Publishing)*, vol 2, 2015
 - Shorter version in *Third International IEEE Workshop on Complex Networks and their Applications*, Nov 2014
- 9 **Jithin K. Sreedharan** and Vinod Sharma, “Spectrum sensing using distributed sequential detection via noisy reporting MAC”, *Signal Processing (Elsevier)*, Jan 2015
- 10 **Jithin K. Sreedharan** and Vinod Sharma. “Nonparametric distributed sequential detection via universal source coding”, *Information Theory and Applications Workshop (ITA)*, Feb 2013
- 11 **Jithin K. Sreedharan** and Vinod Sharma, “Spectrum Sensing via Universal Source Coding”, *IEEE Global Communications Conference (GLOBECOM)*, Dec 2012
- 12 **K. S. Jithin** and Vinod Sharma, “Novel algorithms for distributed sequential hypothesis testing”, *49th Annual Allerton Conference on Communication, Control and Computing*, Sep 2011

- 13 **Jithin K. Sreedharan** and Vinod Sharma, “A novel algorithm for cooperative distributed sequential spectrum sensing in Cognitive Radio”, *IEEE Wireless Communications and Networking Conference (WCNC)*, Mar 2011.
- 14 **K. S. Jithin**, Vinod Sharma, and Raghav Gopalarathnam, “Cooperative distributed sequential spectrum sensing”, *IEEE National Conference on Communication (NCC)*, Jan 2011

Honors and Awards

- ◇ ACM SIGMETRICS / PERFORMANCE travel grant 2016
- ◇ **Best M.Sc.(Engg.) thesis medal** from the Division of Electrical Sciences, Indian Institute of Science, Bangalore, India (Prof. F. M. Mowdawalla medal)
- ◇ PhD fellowship from INRIA Alcatel-Lucent Bell Labs joint lab
- ◇ Awarded Ministry of Human Resources and Development (MHRD), Govt. of India, scholarship for higher education during August 2009-August 2012.
- ◇ Secured a position in top 0.1 percentage of candidates (nearly 1,00,000) in GATE 2009, Electronics and Communication paper (GATE is an annual exam for admission to graduate programs in universities in India).
- ◇ Best performer award in Robert Bosch fresh graduate training 2007.

Experience

- Jan 2017 - present **Postdoctoral research associate**, *NSF Center for Science of Information*, Purdue University, USA, Working with Prof. Wojciech Szpankowski and Prof. Ananth Grama.
- Apr 2016 - **Visiting Research Scholar**, *NSF Center for Science of Information*, Purdue University, USA, Hosted by Prof. Wojciech Szpankowski and Prof. Ananth Grama.
- Jun 2012 - **Research Associate**, *Indian Institute of Science*, Bangalore, India,
- Mar 2013 Universal statistical inference: Developed sequential hypothesis testing algorithms in non-parametric setup using universal codes. Application area was spectrum sensing in cognitive radios. The project was sponsored by Boeing Inc..
- Aug 2007 - **System Engineer**, *Robert Bosch*, Bangalore, India,
- Dec 2008 System engineer for automotive embedded systems in gasoline engines..

Recent Talks

- ◇ *Inference in Networks: Partial Random Walk Crawls & Recovery of Temporal Information*
 - Bell Labs Murray Hill, NJ, USA, Jun 2017
- ◇ *Inference in OSNs via Lightweight Partial Crawls*
 - SIGMETRICS, Juan-les-Pins, France, Jun 2016
- ◇ *Distributed Spectral Decomposition in Networks by Complex Diffusion and Quantum Random Walk*
 - INFOCOM, San Francisco, USA. Apr 2016
 - INRIA-Bell Labs common lab seminar, Paris, France. Dec 2015
 - Demonstration in Bell Labs Future days, Paris, France. Jun 2015
- ◇ *Distribution and Dependence of Extremes in Network Sampling Processes*
 - INRIA-Bell Labs common lab seminar, Paris, France. Jan 2015
 - Third International IEEE Workshop on Complex Networks and their Applications, Marrakech, Morocco, Nov 2014

Schools and Workshops attended

- ◇ School as a part of Workshop on Algorithms and Models for the Web-graph (WAW 2015), Netherlands, Dec 2015 (awarded travel grant)
- ◇ Workshop on “Random walks on graphs”, EURANDOM, Netherlands, Apr 2015 (awarded travel grant)
- ◇ ResCom summer school on “Complex Networks”, Corsica, May 2014 (given a short talk)
- ◇ Winter School on “Complex Networks”, Sophia Antipolis, Jan 2014
- ◇ Indo-French CEFIPRA workshop on “New Avenues for Network Models” and the IFCAM workshop on Social Networks, Bangalore, Jan 2014

Computer Skills

Programming skills Python (including data analytics tools), R, C++, Matlab
Other \LaTeX , Linux command line tools

Other Activities

Organizer

- ACM SIGMETRICS / IFIP Performance 2016 local arrangement committee
- MAESTRO Team (INRIA) internal meeting and seminar series 2013-2016
- AEP 2014 (Atelier en Evaluation de Performances), INRIA Sophia Antipolis

Reviewer IEEE Transactions on Information Theory, IEEE Transactions on Wireless Communication, Performance Evaluation, ACM Transactions on Modeling and Performance Evaluation of Computing Systems, Sigmetrics, ISIT, ICDM

References

Available on request.