

Jithin K. Sreedharan

Postdoctoral research associate

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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 Konstantin Avrachenkov, Philippe Jacquet and **Jithin K. Sreedharan***, “Hamiltonian System Approach to Eigenvalue-Eigenvector Problem in Networks”, *submitted*
- 3 Abram Magner, Ananth Grama, **Jithin K. Sreedharan** and Wojciech Szpankowski, “Recovery of Vertex Orderings in Dynamic Graphs”, *accepted in IEEE International Symposium on Information Theory (ISIT) 2017*
- 4 Konstantin Avrachenkov, Bruno Ribeiro and **Jithin K. Sreedharan***, “Inference in OSNs via Lightweight Partial Crawls”, *ACM SIGMETRICS / PERFORMANCE 2016*
- 5 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*
- 6 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*
- 7 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
- 8 **Jithin K. Sreedharan** and Vinod Sharma, “Spectrum sensing using distributed sequential detection via noisy reporting MAC”, *Signal Processing (Elsevier)*, Jan 2015
- 7 **Jithin K. Sreedharan** and Vinod Sharma. “Nonparametric distributed sequential detection via universal source coding”, *Information Theory and Applications Workshop (ITA)*, Feb 2013
- 9 **Jithin K. Sreedharan** and Vinod Sharma, “Spectrum Sensing via Universal Source Coding”, *IEEE Global Communications Conference (GLOBECOM)*, Dec 2012
- 10 **K. S. Jithin** and Vinod Sharma, “Novel algorithms for distributed sequential hypothesis testing”, *49th Annual Allerton Conference on Communication, Control and Computing*, Sep 2011
- 11 **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.

- 12 **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 - **Postdoctoral research associate**, *NSF Center for Science of Information*, Purdue University, USA, present Working with Prof. Wojciech Szpankowski and Prof. Ananth Grama.
- Apr 2016 - **Visiting Research Scholar**, *NSF Center for Science of Information*, Purdue University, USA, Jun 2016 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 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 Fransisco, 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 L^AT_EX, 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

References

Available on request.