Jithin K. Sreedharan

Postdoctoral research associate
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Research interests: Network science, Statistical inference, Probabilistic modelling

Education

Aug 2013 - Dec 2016 **Doctor of Philosophy**,
INRIA 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 - Aug 2012 **Master of Science (Engineering)**,
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", *Accepted in Computational Social Networks (Springer International Publishing)*
2. Abram Magner (co-primary author), **Jithin K. Sreedharan** (co-primary author), 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 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 - Jun 2016 **Visiting Research Scholar**, *NSF Center for Science of Information*, Purdue University, USA, Hosted by Prof. Wojciech Szpankowski and Prof. Ananth Grama.

Jun 2012 - Mar 2013 **Research Associate**, *Indian Institute of Science*, Bangalore, India,
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 - Dec 2008 **System Engineer**, *Robert Bosch*, Bangalore, India,
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 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: 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.