Ramya Korlakai Vinayak

MC 136-93, 1200 E. California Blvd – Pasadena, CA 91125

ramya@caltech.edu • www.its.caltech.edu/~rkorlaka/

Education

California Institute of Technology   2013 – 2017 (expected)
Ph.D. in Electrical Engineering.
Advisor: Prof. Babak Hassibi.

California Institute of Technology   2011–2013
M.S. in Electrical Engineering, GPA: 4.1/4.0.

Indian Institute of Technology Madras   2007–2011
Bachelor of Technology, GPA: 9.6/10.0 (Major) and 9.5/10.0 (overall).
Major: Electrical Engineering, Minor: Physics.

Awards and Scholarships

- **Invited Participant at Rising Stars in EECS, MIT**, 2015.
- **Schlumberger Foundation Faculty for the Future Fellowship**, 2013-2015.
- **IITM Certificate of Academic Distinction**, 2010.
- **Indian Academy of Sciences Summer Research Fellowship**, Summer 2010.
- **OPJEMS Scholarship**, awarded by the OP Jindal Group of Industries (India) for outstanding performance in academics and leadership, 2008.
- **KVPY Fellowship**, (Young Researcher Fellowship) awarded by Indian Institute of Science, 2005.
- **NTSE Scholarship**, awarded by National Council of Education, Research & Teaching, India, 2005.

Publications

Peer-reviewed Conferences

- **R. K. Vinayak**, B. Hassibi, "Crowdsourced Clustering: Querying Edges vs Triangles," *Neural Information Processing Systems* (*NIPS*), 2016.

- **R. K. Vinayak**, B. Hassibi, "Similarity Clustering in the Presence of Outliers: Exact Recovery via Convex Program," *IEEE International Symposium on Information Theory* (*ISIT*), 2016.

- **R. K. Vinayak**, S. Oymak, B. Hassibi, "Graph Clustering With Missing Data: Convex Algorithms and Analysis," *Neural Information Processing Systems* (*NIPS*), 2014.

- **R. K. Vinayak**, S. Oymak, B. Hassibi, "Sharp Performance Bounds for Graph Clustering via Convex Optimization," *IEEE International Conference on Acoustics, Speech, and Signal Processing* (*ICASSP*), 2014.

Workshops

- **R. K. Vinayak**, B. Hassibi, "Clustering by Comparison: Stochastic Block Model for Inference in Crowdsourcing," *Workshop on Crowdsourcing and Machine Learning, International Conference on Machine Learning* (*ICML Workshop*), 2015.

Under Submission

- **R. K. Vinayak**, T. Zrnic, B. Hassibi, "Tensor-Based Crowdsourced Clustering Via Triangle Queries".

Teaching and Mentorship Experience

Teaching Experience

1. **Stochastic Signal Processing** (Instructor: Prof. Babak Hassibi) Spring 2016
   Graduate Teaching Assistant, California Institute of Technology.
   (*TA Evaluation Rating: 4.5/5.0*)

2. **Advanced Algorithms** (Instructors: Prof. Thomas Vidik, Prof. Katrina Ligett) Spring 2015
   Graduate Teaching Assistant, California Institute of Technology.
   (*TA Evaluation Rating: 5.0/5.0*)

3. **Introduction to Stochastic Processes and Modeling** (Instructor: Prof. Joel Tropp) Fall 2012
   Graduate Teaching Assistant, California Institute of Technology.
   (*TA Evaluation Rating: 5.0/5.0*)

Mentorship Experience

1. Mentee: Tijana Zrnic (Junior), University of Novi Sad, Novi Sad, Serbia. Summer 2016
   Project: "Tensor Factorization Based Algorithms for Clustering via Crowdsourcing."
   Graduate Student Mentor
   Summer Undergraduate Research Program, California Institute of Technology.

2. Mentee: Berk Özdalyan (Sophomore), California Institute of Technology. Summer 2015
   Project: "Randomized Methods for Large Scale Convex Clustering."
   Graduate Student Mentor
   Summer Undergraduate Research Program, California Institute of Technology.

3. Advisory Board Member (2014-2016), Women Mentoring Women (WMW) Program, Caltech Center for Diversity.

Work Experience

California Institute of Technology, Pasadena.
Graduate Research Assistant *2012–Present*

Google Inc., Mountain View.
Software Engineering Intern *June – Sept 2014*

- Implemented and tested a multi-dimensional clustering technique to find rings of fraudulent nodes in advertising networks which is now a part of the spam detection pipeline for AdSense networks.
- Developed and tested tools for data preprocessing and dimensionality reduction for large datasets.

AllGo Embedded Systems Pvt. Ltd., Bangalore.
Summer Intern *May – July 2009*

- Developed and tested an application to establish a multicast network of Zigbee sensors in a Wireless Personal Area Network according to IEEE 802.15.4 Standard for home automation.

Invited Talks

"What You Ask Is What You Get: Query Design & Robust Algorithms for Crowdsourced Clustering."

- **SoCal ML Symposium, California Institute of Technology, Pasadena**. Nov 2016
- **Wireless Networking and Communications Group, Dept. of ECE, UT Austin.** Oct 2016

"Graph Clustering with Missing Data: Convex Algorithms, Theoretical Guarantees & Practical Applications."

- **SIAM Conference on Discrete Mathematics, Atlanta.** June 2016