

Karthik Abinav Sankararaman

Department of Computer Science
University of Maryland, College Park

CONTACT INFORMATION

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INTERESTS

Design, analysis and applications of algorithms, Machine Learning, Optimization, Probability

EDUCATION

University of Maryland, College Park **Started September 2014**
PhD. in Computer Science
Advisor: Dr. Aravind Srinivasan

Indian Institute of Technology, Madras **July 2014**
B.Tech Honours in Computer Science and Engineering
Minor: Operations Research
Thesis: Maximum Flow Problem in Undirected Graphs
Advisor: Dr. N.S. Narayanaswamy

PUBLICATIONS

- Yi-Chin Wu, **Karthik Abinav Sankararaman**, Stéphane Lafortune “Ensuring Privacy in Location-Based Services: An Approach Based on Opacity Enforcement”, *Proc. of the 14th International Workshop of Discrete Event Systems*, pages 33-38, 2014

MANUSCRIPTS

- Brian Brubach, **Karthik A Sankararaman**, Aravind Srinivasan, Pan Xu “New Algorithms, Better Bounds, and a Novel Model for Online Stochastic Matching”, *Under Submission*
- **Karthik Abinav**, Saikrishna Badrinarayanan, C. Pandu Rangan, S. Sharmila Deva Selvi, S. Sree Vivek, Vivek Krishna Pradhan “A Revocable Online-Offline Certificateless Signature Scheme without Pairing”, *Cryptology ePrint Archive, Report 2013/758*, 2013

HONORS

- **Dean’s Fellowship:** University of Maryland, 2014, 2015
- Recipient of the *S.N. Bose Scholarship* 2013 given to **top 50** Indian students.
- Awardee of the National Talent Search examination Scholarship. Awarded to the **top 150 candidates** of India.
- 14th and 16th position in ICPC Mid-Atlantic regionals 2014 and ICPC Asia-Amritapuri regionals 2013 respectively.

RESEARCH EXPERIENCE

Stochastic Optimization, Algorithm Design **August 2014 - Present**
University of Maryland, College Park
Joint work with Brian Brubach, Pan Xu, Aravind Srinivasan
Working on multiple problems such as Matching in Ad-allocation, improving certain concentration bounds, optimization in the context of harnessing solar power, randomized models for team performance

**Algorithms for Maximum Flow,
Graph Sparsification and related problems** **Aug 2013 - Aug 2014**
Indian Institute of Technology, Madras
Area of Work: Graph Theory, Convex Optimization
Joint work with Narayanaswamy N.S.

Privacy in Location Based Services **May - July 2013**
University of Michigan, Ann Arbor
Area of Work: Cyber Security
Joint work with Yi-Chin Wu, Stéphane Lafortune

	Revocable Online-Offline Signature Scheme without Bilinear Pairing <i>Indian Institute of Technology, Madras</i> <i>Area of Work: Cryptography</i> <i>Joint work with Saikrishna Badrinarayanan, C. Pandu Rangan, Sharmila Devi, Sree Vivek</i>	January - April 2013
TEACHING EXPERIENCE	Teaching Assistant, University of Maryland <i>CMSC250 - Discrete Structures, CMSC131- Intro to Programming</i> <i>Responsibilities:</i> Conducting Discussion Sessions, Office Hours, Grading Homeworks and Exams Teaching Assistant, Indian Institute of Technology, Madras <i>Paradigms of Programming</i> <i>Responsibilities:</i> Grading Programming Assignments	
PROFESSIONAL EXPERIENCE	Adobe Inc., San Jose, CA <i>Data Scientist Intern with Algorithms Team in Digital Marketing</i> <i>Responsibilities:</i> Designed and implemented algorithms for Entity Resolution problem which helped multiple Adobe teams obtain cleaner source of data and reducing human efforts. HyperVerge Technologies, Chennai <i>Area of Work : Computer Vision, IOS application, PhoneGap</i> <i>Responsibilities:</i> Developed a mobile application for a pre-startup to help get initial investors and technical mentors onboard Teritree Technology Pvt. Ltd, Bengaluru <i>Area of Work : Natural Language Processing, Databases</i> <i>Responsibilities:</i> Designed and implemented a recommendation system for an early stage VC-funded startup	May-August 2015 May-July 2014 May-July 2012
CLASS PROJECTS	Lower Bounds for Fault Tolerant Facility Placement Problem <i>Class: Algorithmic Lower Bounds</i> <i>Joint work with Thomas Pensyl, Bartosz Rybicki, Mohammad Taghi Hajiaghayi(Instructor)</i> Relation between recursive teaching dimension and VC dimension <i>Class: Machine Learning</i> <i>Joint work with Sina Dehghani, Neal Gupta, Aravind Srinivasan(Instructor)</i> Community detection in Public-Private Graph models <i>Class: Network Design</i> <i>Joint work with Brian Brubach, Soheil Ehsani, Mohammad Taghi Hajiaghayi(Instructor)</i>	Sept 2014 -Dec 2014 Ongoing Ongoing
GRADUATE COURSEWORK	University of Maryland, College Park Algorithmic Lower Bounds, Logic and Artificial Intelligence, Randomized Algorithms, Statistical Learning for Biology, Machine Learning, Network Design Algorithms, Convex Optimization Indian Institute of Technology, Madras Complexity Theory, Approximation Algorithms, Algorithmic Algebra, Cryptography, Natural Language Processing, Convex Optimization, Theory Toolkit, Communication Complexity	
MISCELLANEOUS ACTIVITIES	Ball Following Bot <i>Area of Work : Computer Vision, Microprocessor programming</i> <i>Center for Innovation, IIT Madras</i> Prototype of a 3D Mouse <i>Area of Work : Computer Vision</i> Finalist Industrial Defined Problems Challenge, General Electric	May-June 2011 August-September 2011
TOOLS	Programming Languages C/C++, Java, Python, R, Lisp, Prolog, L ^A T _E X, x86-Assembly	