

Karthik Abinav Sankararaman

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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(NTSE)* Scholarship.
- 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, Stochastic Matching, improving certain concentration bounds, optimization in the context of harnessing solar power

**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>	Fall 2014 Fall 2015 Fall 2015
MISCELLANEOUS ACTIVITIES	Ball Following robot <i>Center for Innovation, IIT Madras</i> Prototype of a 3D Mouse <i>Finalist Industrial Defined Problems Challenge, General Electric, 20111</i>	
SERVICE	External Reviewer: Transactions on Algorithms(TALG) Graduate Admissions Comittee: Department of Computer Science, UMD, 2016	
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, Computational Journalism Indian Institute of Technology, Madras: Complexity Theory, Approximation Algorithms, Algorithmic Algebra, Cryptography, Natural Language Processing, Convex Optimization, Theory Toolkit, Communication Complexity	
PROGRAMMING	C/C++, Java, Python, R, Lisp, Prolog, L ^A T _E X, x86-Assembly	