

Karthik Abinav Sankararaman

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Department of Computer Science
University of Maryland, College Park

CONTACT INFORMATION

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College Park, MD - 20742
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INTERESTS

Design, Analysis and Applications of Algorithms, Machine Learning, Operations Research

EDUCATION

University of Maryland, College Park

PhD. in Computer Science

September 2014 - Present

M.S. in Computer Science

December 2016

Advisor: Dr. Aravind Srinivasan

Indian Institute of Technology, Madras

August 2010 - July 2014

B.Tech Honours in Computer Science and Engineering

GPA: 9.01/10

Minor: Operations Research

Thesis: Maximum Flow Problem in Undirected Graphs

Advisor: Dr. N.S. Narayanaswamy

PUBLICATIONS (AUTHORS ORDERED BY ALPHABETICAL ORDER)

- Brian Brubach, **Karthik A Sankararaman**, Aravind Srinivasan, Pan Xu “Attenuate Locally, Win Globally: Attenuation-based Frameworks for Online Stochastic Matching with Timeouts”, *Proceedings of the 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2017*
- Brian Brubach, **Karthik A Sankararaman**, Aravind Srinivasan, Pan Xu “New Algorithms, Better Bounds, and a Novel Model for Online Stochastic Matching”, *Proceedings of the 24th Annual European Symposium on Algorithms (ESA), 2016*
Journal Version under submission to Mathematics of Operations Research (INFORMS)
- 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

- **Karthik Abinav Sankararaman**, Alexandrs Slivkins “Semi-Bandits with Knapsacks”, *Under Submission, 2017*
- Brian Brubach, **Karthik Abinav Sankararaman**, Aravind Srinivasan, Pan Xu “A Framework to Approximate Column-Sparse Packing Problems”, *Under Submission, 2017*

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

Bandit Algorithms and Online Learning

August 2016 - Present

University of Maryland, College Park

Joint work with Alex Slivkins

Working on Bandit algorithms with global budget constraints.

Stochastic Optimization, Randomized Algorithm Design

August 2014 - Present

University of Maryland, College Park

Joint work with Brian Brubach, Pan Xu, Aravind Srinivasan

Working on multiple problems in Stochastic Matching and other Stochastic Optimization Problems

	Algorithms for Maximum Flow, Graph Sparsification and related problems <i>Indian Institute of Technology, Madras</i> <i>Area of Work: Spectral Graph Theory, Convex Optimization</i> <i>Joint work with Narayanaswamy N.S.</i>	Aug 2013 - Aug 2014
	Privacy in Location Based Services <i>University of Michigan, Ann Arbor</i> <i>Area of Work: Cyber Security</i> <i>Joint work with Yi-Chin Wu, Stéphane Lafortune</i>	May - July 2013
	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, CMSC451- Design and Analysis of Computer Algorithms</i> <i>Responsibilities: Conducting Discussion Sessions, Office Hours, Grading Homeworks and Exams</i>	
	Teaching Assistant, Indian Institute of Technology, Madras <i>Paradigms of Programming</i> <i>Responsibilities: Grading Programming Assignments</i>	
PROFESSIONAL EXPERIENCE	IBM Almaden Research Center, San Jose, CA <i>Mentor: Prithviraj Sen</i> <i>Inter-disciplinary project in computational economics</i>	Summer 2016
	Adobe Inc., San Jose, CA <i>Algorithms Team headed by Anil Kamath</i> <i>Database algorithms</i>	Summer 2015
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>	Fall 2014
	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>	Fall 2015
	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 2015
MISCELLANEOUS	External Reviewer: Transactions on Algorithms(TALG) Graduate Admissions Committee: Department of Computer Science, UMD, 2016, 2017 Travel Grants: FOCS 2016	
GRADUATE COURSEWORK	University of Maryland, College Park: Algorithmic Lower Bounds (M.T. Hajiaghayi), Logic and Artificial Intelligence (V.S.), Randomized Algorithms (A.Srinivasan), Statistical Learning for Biology (Z.Khan), Machine Learning (A.Srinivasan), Network Design Algorithms (M.T. Hajiaghayi), Convex Optimization (M.Rotkowitz), Computational Journalism (N.Diakopoulos), Bandit Theory (Guest class by Alex Slivkins)	
	Indian Institute of Technology, Madras: Complexity Theory (Jayalal Sarma), Approximation Algorithms (Narayanaswamy N.S.), Algorithmic Algebra (Jayalal Sarma), Cryptography (C.Pandu Rangan), Convex Optimization (Krishna Jagannathan), Theory Toolkit (J.Sarma, Narayanaswamy N.S., Ragavendra Rao), Communication Complexity (J.Sarma)	