

Karthik Abinav Sankararaman

June 2016

Department of Computer Science
University of Maryland, College Park

CONTACT INFORMATION

Phone: (+1) 240-715-5910 **Address:** A.V. Williams Building, UMD,
College Park, MD - 20742
Webpage: karthikabinavs.xyz **Email:** kabinav@cs.umd.edu

INTERESTS

Design, analysis and applications of algorithms, Machine Learning

EDUCATION

University of Maryland, College Park **September 2014 - Present**
PhD. in Computer Science
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

- 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
- 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**, 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**

January - April 2013

Indian Institute of Technology, Madras

Area of Work: Cryptography

Joint work with Saikrishna Badrinarayanan, C. Pandu Rangan, Sharmila Devi, Sree Vivek

**TEACHING
EXPERIENCE**

Teaching Assistant, University of Maryland

CMSC250 - Discrete Structures, CMSC131- Intro to Programming

Responsibilities: Conducting Discussion Sessions, Office Hours, Grading Homeworks and Exams

Teaching Assistant, Indian Institute of Technology, Madras

Paradigms of Programming

Responsibilities: Grading Programming Assignments

**PROFESSIONAL
EXPERIENCE**

IBM Almaden Research Center, San Jose, CA

Summer 2016

Adobe Inc., San Jose, CA

Summer 2015

CLASS PROJECTS

**Lower Bounds for Fault Tolerant Facility Placement
Problem**

Fall 2014

Class: Algorithmic Lower Bounds

Joint work with Thomas Pensyl, Bartosz Rybicki, Mohammad Taghi Hajiaghayi(Instructor)

Relation between recursive teaching dimension and VC dimension

Fall 2015

Class: Machine Learning

Joint work with Sina Dehghani, Neal Gupta, Aravind Srinivasan(Instructor)

Community detection in Public-Private Graph models

Fall 2015

Class: Network Design

Joint work with Brian Brubach, Soheil Ehsani, Mohammad Taghi Hajiaghayi(Instructor)

SERVICE

External Reviewer: Transactions on Algorithms(TALG)

Graduate Admissions Committee: 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