Curriculum Vitae of Kanthi Sarpatwar

Contact Information

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Research Interests

I am primarily interested in the design and analysis of algorithms. Specifically, I have worked on submodular optimization, resource allocation/replication, and network design problems.

Education

University of Maryland, College Park. 2010 - 2015
Ph.D Candidate in Computer Science, GPA: 3.93/4.00 (expected)
Advisor: Prof. Samir Khuller.
Thesis: Submodular and Linear Optimization in Networking and Resource Allocation.

Indian Institute of Technology, Madras 2003-2008
Dual Degree (B.Tech and M.Tech) in Computer Science and Engineering.
Advisor: Prof. Narayanaswamy N S.
Thesis: Hardness of Subgraph and Supergraph Problems in r-tournaments.

Internships & Visits

Algorithms group at IBM T.J. Watson, Yorktown Heights Jun-Aug, 2014
Mentors: Dr. Baruch Schieber and Prof. Viswanath Nagarajan.
Also worked with Prof. Hadas Shachnai and Dr. Joel Wolf.

Research Visit at Rutgers, Camden May, 2014
Host: Prof. Guy Kortsarz

Bell Labs, Murray Hill Jun-Mid-Aug, 2013
Mentor: Dr. Randeep Bhatia

Yahoo!, Santa Clara. Jun-Aug, 2012
Performance Display Exchange Serving Group.

Publications

As per the theoretical computer science tradition, the order of authors, in most of the publications, is alphabetical.[1]

Analyzing the Optimal Neighborhood: Algorithms for Budgeted and Partial Connected Dominating Set Problems.
Samir Khuller, Manish Purohit, and Kanthi K. Sarpatwar
Symposium on Discrete Algorithms (SODA) 2014

The X-Flex Cross-Platform Scheduler: Who's The Fairest Of Them All?
Joel Wolf, Zubair Nabi, Viswanath Nagarajan, Robert Saccone, Rohit Wagle, Kirsten Hildrum, Edward Pring, and Kanthi K. Sarpatwar
ACM/IFIP/USENIX Middleware 2014 - Industry Track

New Approximation Results for Resource Replication Problems.
Samir Khuller, Barna Saha, and Kanthi K. Sarpatwar
APPROX-RANDOM 2012

Rainbow Connectivity: Hardness and Tractability.
Prabhanjan Ananth, Meghana Mande, and Kanthi K. Sarpatwar
FSTTCS 2011

Hardness of Subgraph and Supergraph Problems in r-tournaments.
Kanthi K. Sarpatwar, Narayanaswamy N S
Theoretical Computer Science 412(35): 4629-4635 (2011)

[1] Papers are linked at http://www.cs.umd.edu/~kasarpa

Submitted & Working Papers

Approximating Connected Submodular Maximization Problems: A Case Study of Cut Functions.
MohammadTaghi Hajiaghayi, Guy Kortsarz, Robert MacDavid, Manish Purohit, and Kanthi K. Sarpatwar

Approximation Algorithms for Container Selection Problems.
Viswanath Nagarajan, Kanthi K. Sarpatwar, Baruch Schieber, Hadas Shachnai, and Joel L. Wolf

Approximation Algorithms for Covering Problems in Energy Constrained Wireless Networks.
Samir Khuller, Manish Purohit, and Kanthi K. Sarpatwar

Approximate Oracles for Answering Fundamental Graph Queries.
Randeep Bhatia, Bhawna Gupta, and Kanthi K. Sarpatwar

A Constant Approximation Algorithm for the k-All-or-Nothing Generalized Assignment Problem.
Kanthi K. Sarpatwar

Selected Talks

Analyzing the Optimal Neighborhood: Algorithms for Budgeted and Partial Connected Dominating Set Problems.
At the Symposium on Discrete Algorithms (SODA) 2014. Jan, 2014

Fast Graph Queries on Large Networks.
Bells Labs (Alcatel-Lucent), New Jersey. Aug, 2013

New Approximation Results for Resource Replication Problems.
Capital Area Theory Seminar (CATS), University of Maryland. Spring, 2013
Poster Session, Maryland Theory Day. Fall, 2012

Indexing as a Service Model.
Yahoo! Santa Clara, CA. Aug, 2012

Achievements

Future Faculty Fellow 2014-2015
University of Maryland, College Park.

Travel Awards 2014
SIAM travel award, Gannon travel award (UMD)

Dean's Graduate Fellowship Award 2010-2012
Computer Science Department, University of Maryland, College Park.

MCM Scholarship 2003 - 2007
Government of India.

Prathiba Scholarship 2003
Government of Andhra Pradesh.

Professional Skills

Languages: Expert in C, C++, and Python.
Databases: MySQL, PostgreSQL, and SqlPlus.

Professional Review Service

Conferences: SODA 2015, INFOCOM 2015, FSTTCS 2015, and SODA 2014.
Journals: Algorithmica, Discrete Optimization.

Selected Coursework

Grad Courses: Graduate Algorithms, Randomized Algorithms, Algorithmic Game Theory, Network Design Theory, Models for Social Networks, and Database Management Systems.
Under-Grad Courses: Operating Systems, Databases, Compilers, and Computer Organization.

References

Available on request.