Shweta Jain

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Research Interests

Graph algorithms, graph mining, algorithms for massive data, sublinear algorithms.

Education

University of California, Santa Cruz, CA, USA (September 2014 – present)
PhD in Computer Science
Advisor: Prof. Seshadhri Comandur
Pattern Counting in Graphs, Mathematical Foundations of Data Sciences, Combinatorial Algorithms, Analysis of Algorithms, Machine Learning, Computational Models and Complexity

University of Chicago, Chicago, IL, USA.
Master's in Computer Science (September 2012 – December 2013)
Discrete Math, Algorithms, Advanced Algorithms, Introduction to Probability Models, Mathematical Toolkit, Computational and Metric Geometry.

University of Pune (Pune Institute of Computer Technology – PICT), Pune, India.
Bachelor of Engineering, Computers (August 2005 – June 2009)
Thesis: "Space Maps in Ext4"

Awards

– **UC Santa Cruz Regents' Fellowship**, 2014
– **Best Alumni Research (PICT)**, 2010

Publications

Jain, Shweta, and C. Seshadhri. "A Fast and Provable Method for Estimating Clique Counts Using Turán's Theorem." Accepted for publication in Proceedings of the 25th International Conference on World Wide Web. ACM, 2017.

Kadekodi, Saurabh, and Shweta Jain. "Taking Linux Filesystems to the Space Age: Space Maps in Ext4." In Linux Symposium, p. 121. 2010.

Employment

Sandia National Labs, Livermore, CA, USA (June 2016 – September 2016)
As a summer intern working with Ali Pinar, developed an algorithm for estimating the degree distribution of a graph using sampling. Publication pending.

Northwestern University, Evanston, IL, USA (July 2013 – September 2013)
As a Visiting Predoctoral Fellow working with Prof. Jason Hartline, studied the structural properties of revenue-optimal mechanisms for a multi-dimensional unit-demand agent, including variants with supply and allocation constraints. Work involved designing algorithms for creating visual representations of these optimal mechanisms and experimenting with different distributions to understand the behavior of these mechanisms.

Oneirix Engineering Labs Pvt. Ltd., Pune, India (March 2011 – July 2012)
As a part of the Computer Science Research Group, my work included:
– Simulating optical phenomena including scattering and fluorescence using the Monte Carlo method.
– Performing spline based shape optimization of mechanical parts. Work included writing a nonlinear static equilibrium solver.
– Creating a tool to manipulate huge image datasets in real time. It involved creating a compressed data structure (rather than a flat file) that supports image retrieval and modification operations.

TEACHING EXPERIENCE	Teaching Assistant for Algorithms and Abstract Data Types, Winter 2015.
TECHNICAL SKILLS	– Programming: C, C++, Java, JavaScript – Applications: Latex, Matlab – Databases: Microsoft SQL Server, Oracle – Platforms: Linux, Microsoft Windows