

Tanmoy Chakraborty

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Education

- **Graduate Education (2006 onwards):** Doctoral student at the Computer and Information Science Department, School of Engineering and Applied Science, University of Pennsylvania. PhD advisor: Prof. Sanjeev Khanna. Cumulative GPA=3.87. Completed all requirements for obtaining an M.S.E. degree in Computer and Information Science.
- **Undergraduate Education (2003-2006):** Bachelor of Science (with Honours) in Mathematics, at Chennai Mathematical Institute (CMI), India. Cumulative GPA=9.65/10.00 (normalized CGPA: 3.86).

Academic Publications

- **Network Design for Vertex Connectivity** (with Julia Chuzhoy and Sanjeev Khanna): Submitted.
- **One-input-face MPCVP is hard for L, but in LogDCFL** (with Samir Datta): 26th Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FST&TCS), 2006.
- **Grid Graph Reachability Problems** (with Eric Allender, David A. Mix Barrington, Samir Datta and Sambuddha Roy): 21st Annual IEEE Conference on Computational Complexity (CCC), 2006.

Honours

- Doctoral Fellowship, University of Pennsylvania, 2006 onwards.
- Visited the Department of Mathematics, Ecole Normale Supérieure (ENS), Paris, as a summer student in 2006. This honour is given to the top 3 students in my undergraduate school, as part of an exchange program. I also won the award for Excellence in Research as an Undergraduate Student in my undergraduate program.
- National Board of Higher Mathematics (India) scholar, 2003-2006.
- Indian National Mathematical Olympiad (INMO) Awardee, 2002 and 2003. This award is given annually to 30 high school students in India, who are selected on the basis of nationwide tests of mathematical skills, and attend a mathematics training camp where they undergo further selection to represent India at the International Mathematical Olympiad (IMO).
- National Talent Search Scholar (India), 2001. This award is given annually to 500 students in the tenth standard, selected through nationwide tests that assess scholastic aptitude.
- Ranked 38th and 28th in Google India Code Jam 2005 and 2006, respectively. Google India Code Jam is an algorithmic programming (in C/C++/Java) competition organized by Google, which is open for participation to all adult citizens of about 10 countries of South and South-East Asia.

Skills

- I am currently researching on Approximation and Randomized Algorithms, and hardness of approximation, primarily for graph-theoretic optimization problems. I have also worked on Computational Complexity. I have a strong mathematical background, including expertise in probabilistic analysis. I am also well-acquainted with Machine Learning Theory, and I am looking into Electronic Commerce.
- I am familiar with a varied range of programming languages. I have substantial experience of programming in Java, C++, C, Matlab and Haskell. I also have working knowledge of Perl and Linux shell script. I have experience in working on Linux and Windows operating systems.
- I have strong communication skills, and am always keen to work hard and learn new topics, especially those which have a mathematical core.

Courses

- Graduate Coursework: Introduction to Artificial Intelligence (Machine Learning), Advanced Topics in Artificial Intelligence (Sponsored Search Markets), Advanced Topics in Algorithms (Streaming and Approximation), Advanced Probability, Software Systems and several Independent study courses in Algorithms under Prof. Sanjeev Khanna and Prof. Sudipto Guha. I successfully appeared in all my written PhD qualifiers, in Algorithms, Theory of Computation, Machine Learning and Software Systems.
- Undergraduate Coursework:
 - Mathematics: Algebra (4 courses), Calculus (3 courses), Analysis (2 courses), Topology, Differential Equations and Probability.
 - Computer Science: Programming in Haskell, Programming in C, Programming Language Concepts, Computer Organization, Discrete Mathematics, Logic, Algorithms, Theory of Computation, Operations Research, Computational Complexity.
 - Other: English, Economics, Physics (2 courses).

Teaching

- Teaching Assistant for CSE 262, a course on Theory of Computation for undergraduate students.
- Assistant Coach at the annual IOI Training Camp, where the Indian team to represent India in the International Olympiad in Informatics (IOI) is selected, in 2004 and 2005. I instructed classes, set problems and helped in evaluating the tests.

References

- **Sanjeev Khanna.** Professor, Computer and Information Science Department, University of Pennsylvania. Website: <http://www.cis.upenn.edu/~sanjeev/>. Email: sanjeev@cis.upenn.edu
- **Sudipto Guha.** Assistant Professor, Computer and Information Science Department, University of Pennsylvania. Website: <http://www.cis.upenn.edu/~sudipto/>. Email: sudipto@cis.upenn.edu
- **Samir Datta.** Faculty member, Chennai Mathematical Institute, India. Website: <http://www.cmi.ac.in/~sdatta/>. Email: sdatta@cmi.ac.in