

Soumitra Pal

- CONTACT INFORMATION** SIC-310, Kanwal Rekhi Building (KReSIT) *Cell: +91 98697 73453*
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Indian Institute of Technology – Bombay *Email: mitra@cse.iitb.ac.in*
Powai, Mumbai, MH 400076, India *Web: www.cse.iitb.ac.in/~mitra*
- RESEARCH INTERESTS** Algorithms, Bioinformatics, Combinatorial Optimization, Parallel and Distributed Systems, Machine Learning
- EDUCATION** **Indian Institute of Technology – Bombay**, Powai, Mumbai, India
- Ph.D., Computer Science and Engineering August 2013
- Thesis: *Scheduling Light-trails on WDM Paths and Rings : an Application of Component Coloring of Graphs*
 - Advisor: Professor Abhiram G. Ranade
 - Area of Study: Graph Theory, Approximation Algorithms, Online Algorithms
 - CPI: 9.0/10 (course work and seminar)
- M.Tech., Computer Science and Engineering August 2007
- Thesis: *Improving branch-and-price algorithms for solving one dimensional cutting stock problem*
 - Advisor: Professor Abhiram G. Ranade
 - Area of Study: Branch-And-Price based Exact Algorithms
 - CPI: 9.11/10
- Bengal Engineering and Science University**, Shibpur, Howrah, West Bengal, India
- B.E., Computer Science and Technology July 2000
- Thesis: *Synthesis of Cellular Automata and Multiple Attractor Cellular Automata based classification*
 - Advisor: Professor Parimal Pal Chaudhuri
 - Area of Study: Cellular Automata
 - Marks: 85.2%
- PUBLICATIONS** Soumitra Pal, Ankita Mawandia, and Srinivas Aluru. “Distile: Extending Reptile for Insert Delete Errors.” In preparation.
- Soumitra Pal, and Srinivas Aluru. “In Search of Perfect Reads.” Accepted at *IEEE International Conference on Computational Advances in Bio and Medical Sciences (ICCABS) 2014*.
- Ajit Diwan, Soumitra Pal, and Abhiram Ranade. “Component Coloring of Proper Interval Graphs and Split Graphs.” *Under review in Discrete Applied Mathematics*.
- Vijay Arya, T. S. Jayram, Soumitra Pal, Shivkumar Kalyanaraman. “Inferring Connectivity Model from Meter Measurements in Distribution Networks.” *e-Energy*, 173–182, 2013.
- Soumitra Pal, and Abhiram Ranade. “Scheduling Light-trails on WDM Rings.” In: *Journal of Parallel and Distributed Computing*, 72(10):1226–1236, 2012.
- T. S. Jayram, Soumitra Pal, and Vijay Arya. “Recovery of a Sparse Integer Solution to an Underdetermined System of Linear Equations.” *Workshop on Sparse Representation and Low-rank Approximation in 25th Annual Conference on Neural Information Processing Systems*, Granada, Spain, 12-17 December 2011.
- Soumitra Pal, and Abhiram Ranade. “Scheduling Light-trails on WDM Rings.” In: *Proceedings of the 17th International Conference on Advanced Computing and Communications (ADCOM’09)*, Bangalore, India. December 2009.
- Soumitra Pal, Ish Dham, and Tor E. Jeremiassen. “Design and Validation Techniques to Implement a Robust Hindsight Feature on ISA Simulators.” In: *Global Signal Processing Expo and Conference – GSPx*, Santa Clara, USA. September 2004. [Unrefereed].
- Soumitra Pal, and Prem Kumar Vadapalli. “A methodology for Saving and Restoring the State of ISA simulators.” In: *Global Signal Processing Expo and Conference – GSPx*, Santa Clara, USA. September 2004. [Unrefereed].

ACADEMIC
EXPERIENCE

Indian Institute of Technology – Bombay, Mumbai, India

Teaching Assistant

July 2005 to June 2009

- Assisted instructors in evaluating quizzes, exams, assignments and scribing lecture notes
 - CS 101: Computer Programming Utilization Autumn '05
 - CS 218/CS 301: Design and Analysis of Algorithms Autumn '07, Spring '09
 - CS 435: Linear Optimization Autumn '06
 - CS 606: Foundations of Parallel Computing Spring '07, Spring '08

Web Administrator

January 2007 to June 2007

- Maintained by frequently updating our *PhpWebSite* based departmental website

PROFESSIONAL
EXPERIENCE

Computer Science and Engineering, Indian Institute of Technology – Bombay, Mumbai, India

Project Research Associate

January 2013 till date

- Project: *SanGeniX*: A comprehensive Next Generation Sequence (NGS) data analysis solution.
- PI: Srinivas Aluru, Co-PI: Abhiram G. Ranade

IBM India Research Lab. (IRL), Bangalore, India

Research Intern

May 2011 to July 2011

- Project: *Phase Identification in Smart Grids using Analytics*. From the time series data of meter measurements at the houses and at the transformer site, retrieve information about the electric phase each house is connected to, using LP based recovery algorithms.
- Was judged as one of the three best summer internship projects at IBM Research - India.
- Mentors: T. S. Jayram, Vijay Arya

Texas Instruments (TI), Bangalore, India

Senior Software Design Engineer

July 2002 to June 2005

- Worked with team to design and implement 'backward step' and 'backward run' feature in Instruction Set Simulators (ISS) for TI DSPs using lightweight check pointing
- Worked with team to design and implement enhancements to standalone (loader) client for ISS
- Design and implementation of software interfaces for integrating ISS to different IDEs – TI Code Composer Studio, Vitis Virtual Platform Simulators, Mentor Graphics Seamless CVE

Software Design Engineer

July 2000 to June 2002

- Implemented new features and improved performance of ISS for TMS320C54XX series of DSPs
- Implemented a multiprocessor ISS for TMS320C5421 DSP
- Designed a methodology to implement check pointing and restarting ISS for TMS320C55XX series of DSPs

PROFESSIONAL
SERVICES

Conference Organizing Committee

- Foundations of Software Technology and Theoretical Computer Science (FSTTCS) 2011

Reviewer for Journals

- Theoretical Computer Science (TCS)

REFERENCES

Dr. Abhiram G. Ranade

- Professor, Computer Science and Engineering
- Indian Institute of Technology – Bombay, Powai, Mumbai, MH 400076, India
- Email: ranade@cse.iitb.ac.in; phone: +91 22 2572 7734

Dr. Srinivas Aluru

- Professor, School of Computational Science and Engineering
- College of Computing, Georgia Tech University, 801 Atlantic Drive, Atlanta, GA 30332
- Email: aluru@cc.gatech.edu

Dr. T. S. Jayram

- Manager, Algorithms and Computation
- IBM Research - Almaden, 650 Harry Road, San Jose, CA 95120
- Email: jayram@almaden.ibm.com