

Preeti Malakar

CONTACT INFORMATION Department of Computer Science and Automation Indian Institute of Science Bangalore-12, Karnataka, India Email: preeti@csa.iisc.ernet.in <http://clweb.csa.iisc.ernet.in/preeti>

RESEARCH INTERESTS Parallel programming, distributed computing, application scheduling, performance modeling, high-performance simulations and scientific visualization.

EDUCATION **Indian Institute of Science**, Bangalore, India.

Ph.D, Department of Computer Science and Automation (August 2008 – present)

- CGPA: 7.0/8.0
- Thesis Topic: *Integrated Parallelization of Computations and Visualization for Large-scale Weather Modeling Applications*
- Advisors: Prof. Sathish S. Vadhiyar and Prof. Vijay Natarajan

Indian Institute of Technology Guwahati, Guwahati, India.

M.Tech, Department of Computer Science and Engineering (2004 – 2006)

- CGPA: 9.38/10.0
- Thesis Topic: *A Simple Security Policy for the Linux Kernel*
- Advisor: Prof. Gautam Barua

Dr. B. C. Roy Engineering College, Durgapur, India.

B.E., Department of Computer Science and Engineering (2000 – 2004)

- Aggregate Marks: 86.2%
- Thesis Topic: *Delay Analysis for a Heterogeneous Multi-Server System*
- Advisor: Prof. G. P. Bhattacharjee

PUBLICATIONS

Conference Proceedings

- “A Diffusion-Based Processor Reallocation Strategy for Tracking Multiple Dynamically Varying Weather Phenomena”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, Ravi Nanjundiah, *42nd International Conference on Parallel Processing (ICPP 2013)*, Lyon, France, October 2013. (*To appear*)
- “A Divide and Conquer Strategy for Scaling Weather Simulations with Multiple Regions of Interest”, Preeti Malakar, Thomas George, Sameer Kumar, Rashmi Mittal, Vijay Natarajan, Yogish Sabharwal, Vaibhav Saxena, Sathish Vadhiyar, *IEEE/ACM Supercomputing Conference (SC 2012)*, Salt Lake City, UT, November 2012. (**Best Student Paper finalist**).
- “Performance Evaluation and Optimization of Nested High Resolution Weather Simulations”, Preeti Malakar, Vaibhav Saxena, Thomas George, Rashmi Mittal, Sameer Kumar, Abdul Naim, Saiful A. Husain, *International European Conference on Parallel and Distributed Computing (Euro-Par 2012)*, Greece, August 2012.
- “InSt: An Integrated Steering Framework for Critical Weather Applications”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, *International Conference on Computational Science (ICCS 2011)*, Singapore, June 2011.

- “An Adaptive Framework for Simulation and Online Remote Visualization of Critical Climate Applications in Resource-constrained Environments”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, *IEEE/ACM Supercomputing Conference (SC 2010)*, New Orleans, LA, November 2010.

Posters/Short Papers

- “Integrated Parallelization of Computation and Visualization for Large-scale Weather Applications”, Preeti Malakar, *Dissertation Research Showcase, SC 2012*, Salt Lake City, UT, November 2012.
- “Integrated Parallelization of Computations and Visualization for Large-scale Applications”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, *IPDPS 2012 PhD Forum*, Shanghai, May 2012.
- “A Coupled Framework for Parallel Simulation and Visualization”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, *Grace Hopper Celebration of Women in Computing INDIA*, Bangalore, India, December 2010.
- “An Integrated Simulation and Visualization Framework for Tracking Cyclone Aila”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, Ravi Nanjundiah, *Student Research Symposium, International Conference on High Performance Computing (HiPC 2009)*, Kochi, India, December 2009. (**TCPP Best paper award**).
- “An Integrated Simulation and Visualization Framework for Tracking Cyclone Aila”, Preeti Malakar, Vijay Natarajan, Sathish Vadhiyar, Ravi Nanjundiah, *Workshop on HPC in India held in conjunction with IEEE/ACM Supercomputing Conference (SC 2009)*, Portland, OR, November 2009.

AWARDS

- Best Student Paper finalist in ACM/IEEE Supercomputing 2012.
- TCS Research Scholarship 2010-2013.
- Google India Women in Engineering Award 2011.
- TCPP Best Paper Award in Student Research Symposium, HiPC 2009.
- 2nd prize in National Level Programming contest in Aarohan 2004 at NIT Durgapur.

PROFESSIONAL EXPERIENCE

IBM India Research Lab, Delhi, India

Summer Intern May 2011 – August 2011

Oracle Corporation, Bangalore, India

Member Technical Staff August 2006 – July 2008

Indian Institute of Technology Guwahati, Guwahati, India

Teaching Assistant August 2004 – April 2006

Variable Energy Cyclotron Centre, BARC, Kolkata, India

Summer Intern June 2003

TALKS/PRESENTATIONS

- Scripps Institution of Oceanography, San Diego, November 2012.
- IEEE/ACM Supercomputing Conference, Salt Lake City, November 2012.
- Indo-U.S. Symposium on Women in Engineering, Bangalore, August 2012. (Invited)
- CSA Undergraduate Summer School, IISc, Bangalore, July 2012.
- The Third Electrical Sciences Divisional Symposium, IISc, Bangalore, January 2012.
- Women in Technology and Science Meet, GE, Bangalore, November 2011. (Invited)
- International Conference on Computational Science, Singapore, June 2011.
- IEEE/ACM Supercomputing Conference, New Orleans, November 2010.
- Student Research Symposium, HiPC, Kochi, December 2009.

WORKSHOPS

ATTENDED

(SELECT)

- MSR India 2012 Summer School on Distributed Algorithms, Systems, and Programming, IISc, Bangalore, June 2012.
- Scientific discovery through intensive data exploration, JNCASR, Bangalore, February 2012.