

Sarat Sreepathi

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Objective

To pursue a challenging career where I can realize my true potential and passion.

Education

- [December 2006 - Present] North Carolina State University, Raleigh, NC. **PhD in Computer Science.**
Dissertation Area: Parallel bio-inspired optimization algorithms for solving combinatorial search problems.
- [August 2004 - December 2006] North Carolina State University (NCSU), Raleigh, NC. **MS in Computer Science.** GPA: 3.66. Thesis: [Cyberinfrastructure for Contamination Source Characterization in Water Distribution systems.](#)
- [June 2000 - May 2004] Nagarjuna University, India. **Bachelor of Technology in Computer Science and Engineering.** GPA: 4.0.

Research

- Graduate Research Assistant working for Dr. G. (Kumar) Mahinthakumar.
- **Project:** [Adaptive Cyberinfrastructure for Threat Management in Water Distribution Systems \(NSF project\)](#)
Developing an end to end solution for Threat Management in Water Distribution Systems through development of optimization algorithms and specific cyberinfrastructure elements that enable efficient seamless execution of the core software components in a grid environment.
- **Project:** [Performance Engineering Research Institute \(DOE SciDAC project\)](#)
Performance Analysis and Optimization of a Groundwater application specifically on Cray XT4 supercomputer at Oak Ridge National Laboratory.
- **Previous Project:** [Performance Evaluation Research Center \(DOE SciDAC project\)](#)
Analyzing performance of High Performance Computing Applications (Nuclear Fusion & Astrophysics codes) including performance tool evaluation at several Supercomputing facilities (Oak Ridge National Laboratory, Teragrid etc.)
- Research group cluster planning, deployment, benchmarking and maintenance. Benchmarking done using HPL(Linpack).
- **Interests:** High Performance Computing, Bio-inspired optimization algorithms, Performance Analysis and Optimization.

Work Experience

- [May 2005 – August 2005] Internship at **Microsoft**. Developed/extended framework and automation tools for testing Password Management Application for Identity Integration Server (MIIS) team.
- [August 2005] Research work at **Oak Ridge National Laboratory**. Worked with Dr.Patrick Worley on baseline performance analysis of nuclear fusion application, Gyro.
- [August 2004 – March 2005] Database Programmer, **Systems-NCSU Libraries**. Developed an Enterprise Resource Management tool for the Acquisitions and Collection Management departments using Oracle and MySQL.

Graduate Coursework

Parallel Computing, Operating Systems, High Performance Computer Modeling, Design and Analysis of Algorithms, Compiler Construction, Information Systems Security, E-Commerce Practicum, Software Engineering and Advanced Water Resources.

Current: Evolutionary Computation and Introduction to Numerical Methods.

Technical Skills

- High Level Languages: C, C++, Matlab, Fortran90, Java, Perl, Python, PL/SQL.
- Operating Systems: Windows , Linux (RedHat, SuSE etc.), IBM AIX , Solaris, Cray Catamount, Compute Node Linux(CNL).
- Hardware Platforms: x86, x86-64/x64, IA-64, IBM P-690, SGI Altix, Cray X1, Cray XT3, Cray XT4, BlueGene/L, BlueGene/P.
- Libraries: MPI, OpenMP. Compilers/Tools: GNU, Pathscale, Intel, Portland Group.
- (Worked on supercomputers/clusters with above architectures and programming environments).

Course Projects (For details and links for reports, please visit the [projects](#) section on website)

- **Web Server Audit Subsystem with McAfee Research:** This project focused on augmenting a Web Server with Audit capabilities compatible with an audit-enabled operating system (SunOS) and then demonstrates that analysis of attacks on the web server is improved with the addition of server-specific audit data. This project is done in conjunction with McAfee Research.
- **Distributed File System :** A user level distributed file system was developed which also provided Security, Fault Tolerance, Replication and Availability.
- **Micro-Shell:** A micro shell is developed that provided a core subset of the features available in the c-shell.
- **Datamation Sort:** This project involved sorting of one million records (size of each record is 100 bytes) and was based on the sort benchmark from Microsoft Research.
- **Minute Sort:** This project involved sorting the maximum number of records (each record is 100 bytes) in one minute. (based on Microsoft Research sort benchmark).

- **Beowulf Cluster** (Undergrad Project): A Beowulf Cluster comprising of 8 nodes was setup and various parallel programs were implemented.
- **Operating Systems Security**: A survey was conducted on the security and protection mechanisms that are present in the modern operating systems.
- **Secure Routing in Ad hoc Networks**: A survey is conducted on the current state of security in routing algorithms in Adhoc networks.

Interests and Activities

- Member of IEEE, IEEE Computer Society, ACM, Triangle Linux Users group and Evolutionary Computing Research group.
- Attended Supercomputing conferences (SC'05, SC'06, SC'07), Internet2 Fall 2006 member meeting and HPC Revolution 2005 Conferences.
- Selected & served as Student volunteer at Supercomputing (SC'05) conference.
- Selected & served as Student volunteer at Supercomputing (SC'06) conference.
- Selected & served as Student volunteer at Supercomputing (SC'07) conference.
- Selected for and attended SDSC (San Diego Supercomputing Center) Summer Institute 2006.

Recognition

- Scored 99.35 percentile in Graduate Aptitude Test in Engineering(Computer Science) in India.
- Served as Secretary of ACM student chapter at NCSU ('05-'06).
- Selected as Microsoft Student Ambassador for North Carolina State University ('05).

Publications

- Sarat Sreepathi, Kumar Mahinthakumar, Emily Zechman, Ranji Ranjithan, Downey Brill, Xiaosong Ma, and Gregor von Laszewski, [*Cyberinfrastructure for Contamination Source Characterization in Water Distribution systems*](#), Lecture Notes in Computer Science, Volume 4487/2007 (International Conference on Computational Science (1) 2007: 1058-1065)
- G. Mahinthakumar, G. von Laszewski, S. Ranjithan, E. D. Brill, J. Uber, K. W. Harrison, S. Sreepathi, and E. M. Zechman, [*An Adaptive Cyberinfrastructure for Threat Management in Urban Water Distribution Systems*](#), Lecture Notes in Computer Science, Springer-Verlag, pp. 401-408, 2006.(International Conference on Computational Science (3) 2006: 401-408)
- Patrick Worley, Jeff Candy, Laura Carrington, Kevin Huck, Tim Kaiser, Kumar Mahinthakumar, Allen Malony, Dan Reed, Philip Roth, Hongzhang Shan, Sameer Shende, Allan Snaveley, Sarat Sreepathi, Ying Zhang, [*Tools or No tools?: A parallel performance analysis case study \(extended abstract\)*](#), Poster Presentation at Supercomputing 2006.
- P. Worley, J. Candy, L. Carrington, K. Huck, T. Kaiser, G. Mahinthakumar, A. Maloney, S. Moore, D. Reed, P. Roth, H. Shan, S. Shende, A. Snaveley, S. Sreepathi, F. Wolf, and Y. Zhang, [*Performance Analysis of GYRO: A Tool Evaluation*](#), Journal

of Physics: Conference Series, **16** (2005), pp. 551-555. (Proceedings of the 2005 SciDAC Conference, San Francisco, CA, June 26-30, 2005.)