Nishanth Nagendra

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EDUCATION

Master of Science in Informatics **Munich, Germany**

Technical University of Munich, Oct 2013 – Present (GPA: 1.4 / 5.0)

Thesis Topic : *Job Scheduling for Adaptive Applications in Future HPC Systems (Ongoing)*

Bachelor of Computer Science and Engineering **Bangalore, India**

Atria Institute of Technology, 2005 - 2009

Aggregate: 79.23%, Topper's grade: 79.80%

Thesis Topic : *Implementation of an Image Editing Software and A JPEG Compression Utility*

RESEARCH INTERESTS

Job Scheduling, Resource Management, Parallel Programming Models, Runtime Systems, Performance Modelling and Tuning of Parallel Applications

RESEARCH EXPERIENCE

Student Assistant **Jul 2014 – Present**

Chair for Architecture of Parallel and Distributed Systems

Technical University of Munich

- **InvasIC – Invasive Computing (Ongoing)**
  1. Research and develop an early prototype that can simulate the support for resource management and scheduling of adaptive parallel applications on future HPC systems.
  2. Collaborate and coordinate with research group members who are involved in developing the invasive version of MPI and resource mgmt. to support adaptive MPI applications.
  3. Developing the support for visualization of runtime scheduling decisions in the vampir tool.
- **AutoTune – Automatic Online Tuning (Completed)**
  1. Enhancement of the performance capping plugin to implement and evaluate a simple linear regression technique for modeling the performance of an OpenMP application for energy efficiency and using the same for making simple predictions.
  2. Evaluating the compiler flags selection plugin by testing it against various benchmark scientific applications for precision, robustness and performance. And, generating useful statistics and graphs to visualize and interpret the results for drawing important conclusions on the utility of this plugin.

ACADEMIC PROJECTS

Implementation of a metaheuristic for the discrete network design problem **Dec 2014 – Nov 2015**

Inter Disciplinary Project(Team size:1), TUM School of Management

- Literature survey on the various metaheuristic approaches to solve discrete/continuous traffic network design problems that are usually non-convex in nature and of the form of a bi-level linear program.
- Design and Implementation of a Genetic Algorithm in C along with the Modeling and Solving of the optimization problem using FICO Xpress Optimizer library in C++.
- Evaluating the Algorithm under various settings with small to large scale traffic networks for correctness, performance and effectiveness.

Parallelization of applications using openMP and MPI **Apr 2014 – Aug 2014**

Lab course(Team size:3)- Efficient programming of Multicore Processors and Supercomputers, Department of Informatics

- Parallelization of the given heat simulation code using openMP.
- Parallelization of the minimax and alpha-beta search techniques in the given two player game called "Abalone" using MPI.

PROFESSIONAL EXPERIENCE

Senior R&D Engineer **Aug 2011 – Sep 2013**

Mavenir Systems *Bangalore, India*

- Low level design, and, Implementation of new features in the AirMessenger messaging product. Involved in the enhancement of several modules relating to SMPP, billing, LDAP, traffic logging, message receiver/delivery, message store, queuing, retrieval and retrying functionalities.
- Product support for bug fixes after live deployment.
- Testing and Documentation.

Software Engineer **Mar 2010 – Apr 2011**

Aricent Technologies *Bangalore, India*

- Implementing the support for migration of a VoIP product from IPv4 to Ipv6. This involved low level design, and, enhancement of protocol specific modules like SIP, DIAMETER etc.
- Underwent training for 2 months on UMTS technology, product based training on RNC, Uplane software. Performed sustenance, feature enhancement and resolved small bugs.
- Simulation of X2AP – an LTE specification [at Aricent Training Facility]. A short team project which involved programming with sockets, threads, Unix IPC facilities like message queues, and, pipes.

TECHNICAL SKILLS

Programming:	C, C++
Platforms:	Linux
Programming: Tools/Libraries	pthread, OpenMP, MPI, C POSIX library, Debugging tools(gdb, gprof, valgrind, splint), Basic level usage of C++ STL
Project Mgmt.:	ViM Editor, Basic level usage of github, Version mgmt. and defect tracking using IBM's Rationale Software, CVS, Basic level usage of Visual studio and Eclipse IDE's

ACHIEVEMENTS

- Secured 99.7 percentile, and, an All India Rank of 274 out of 1.4 lac candiidates in GATE (Graduate Aptitude Entrance Test in Engineering), 2010, India.
- Awarded merit scholarships twice during bachelors for standing in the top 3 ranks.
- Received a rating of outstanding performance for the year 2012 at Mavenir Systems.

LANGUAGES

English, Kannada, Hindi: Proficient
German, Sanskrit: Elementary

I hereby declare that the information given above is true to the best of my knowledge and belief.