Nishanth Nagendra

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Bangalore, India

TECHNICAL SKILLS

Programming:	C, C++
Platform:	Linux, Unix
Libraries:	Pthread, Tcp/Ip Socket API, Posix IPC, C++ STL, MPI, OpenMP, FICO Xpress
Tools:	Debugging tools (gdb, valgrind), gprof, gcov, Wireshark, Tcpdump, GNU Build System (Autotools), Git, Version mgmt. and Defect tracking using IBM's Rationale Software
Protocols:	TCP, IP, UDP, LDAP, SMPP
Total Experience:	5 yrs

PROFESSIONAL EXPERIENCE

Software Engineer **Apr 2018 – Present**
Intel *Bangalore, India*

Senior Software Engineer **Feb 2017 – Jan 2018**
Sandvine Technologies *Bangalore, India*

1. Low level design and Implementation of Ud interface on Sandvine's PCRF(Policy and Charging Rules function). This involved supporting new LDAP operations, counters and alarms. Took individual ownership during 2nd half of the project and led it to completion.
2. Involved in the last phase of the DiameterS9 project and performed development activities, unit testing and functional testing towards supporting S9 interface.
3. *Tech Specs: C++, STL, LDAP, Diameter, PCRF, Boost, CxxTest UT Framework, High Availability, Tcl, git, Wireshark, Hercules, gdb, Jenkins, ClearCase, ClearQuest*

Research Assistant **Jul 2014 – Oct 2016**
Chair for Architecture of Parallel and Distributed Systems, *Munich, Germany*
Technical University of Munich (Masters Degree, Oct 2013 – Jul 2016)

- **InvasIC – Invasive Computing (*http://invasic.informatik.uni-erlangen.de*)**

1. Design and development of plugins, protocols for a newly proposed 3-tier architecture of SLURM to support resource management and scheduling on future exascale systems.
2. The new plugins also support invasive MPI applications. Evaluation of the extended software was done by simulating on a single node and two node cluster.
3. Developed the support for visualization of runtime scheduling decisions in the Vampir tool with the help of Open Trace Format (OTF) library. Evaluated on a small cluster using VMs.
4. *Tech Specs: C, Pthread, TCP / IP Socket Programming, Posix, MPI, Elastic Scaling, High Performance Computing, gdb, valgrind, git, Oracle VM Virtual Box, Perl, OTF library*

- **AutoTune – Automatic Online Tuning (*http://www.autotune-project.eu*)**

1. Extended the performance capping plugin to use a simple linear regression technique for modeling the performance of an OpenMP application for energy efficiency. Also, Evaluated the compiler flags selection plugin.
2. *Tech Specs: C++, STL, OpenMP, gdb, valgrind, git, Autotools, Periscope Tuning Framework Application Performance Management*

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.
- Testing, Documentation and Product support for bug fixes after live deployment.
- *Tech Specs: C, MAP, SMPP, DCCA, Wireshark, SMS, gdb, Postgres, LDAP, ClearCase, ClearQuest*

Software Engineer **Mar 2010 – Apr 2011**
Aricent Technologies *Bangalore, India*

- Invovled in implementing the support for migration of a VoIP product (Sonus ASX) from IPv4 to IPv6. This involved low level design, and, enhancement of protocol specific modules like SIP, Diameter etc. along with unit, functional and system testing using scripts and softphones.
- Completed a project to simulate X2AP – an LTE specification as part of the fresher training.
- *Tech Specs: C, C++, STL, TCP / IP Socket Programming, IPC, pthreads, SIP, Diameter, Wireshark, gdb, valgrind, gcov, splint, ClearCase, ClearQuest, CVS*

EDUCATION

Master of Science in Informatics **Oct 2013 – Jul 2016**
Technical University of Munich, GPA: 1.3 / 5.0 (1.0 – Best) *Munich, Germany*

Bachelor of Computer Science and Engineering **Aug 2005 – Jul 2009**
Atria Institute of Technology, GPA: 79.24 / 100 *Bangalore, India*

ACADEMIC PROJECTS

Master Thesis: Job Scheduling for Elastic Parallel Applications on Future HPC Systems

Research, development (C, pthread) and evaluation of a dynamic and flexible scheduling strategy to support elastic scaling of parallel applications using a new negotation protocol in SLURM. The negotiation protocol is used for communication between batch and runtime schedulers. Evaluation was performed using a benchmark suite called ESP (Effective System Performance).

Implementation of a Metaheuristic for the Discrete Network Design Problem

Research, development and evaluation of a metaheuristic to solve the traffic network design problem. A genetic algorithm was implemented in C and FICO Xpress Optimizer library for C++ was used for solving the optimization problem.

PERSONAL SKILLS

Organizational Skills: Experienced working in small / large software development teams both in flat and vertical hierarchy. Strong experience of the full software development lifecycle.

Language Skills: Proficient - Kannada, English and Hindi. Basic – German, Sanskrit

Hobbies and Interests: Badminton, Dancing, Biking, Cooking, Playing Violin