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Raghavendra Prabhu

Education

2004-2008 **B.Tech.**, *National Institute of Technology Karnataka (NITK), Surathkal*, *GPA*. 8.74

Undergraduate thesis

title *Link-Based Object Classification and Ranking with unsupervised learning*

supervisors Dr. Santhi Thilagam

description Dealt with classification and ranking of web pages based on Link Mining and Kohonen Self-Organizing Maps.

Research Interests

Operating System kernel, Databases, Machine Learning, GPGPU, Distributed Computing, Data Mining.

Experience

Vocational

2013 - Present **Product Lead**, Percona LLC.
As the Product Lead of Percona XtraDB Cluster (PXC), involved in its development and milestone releases, including the first GA release of PXC 5.6, and several PXC 5.5 releases.

2011 - 2012 **Senior Support Engineer**, Percona LLC.
Handled launchpad-based development work along with consulting and support issues.

2008 - 2011 **Systems Engineer**, *Cloud Computing*, Yahoo! Research and Development, Bangalore.
Worked on MySQL and memory mapped databases, replication, and distributed hash tables (DHT).I have implemented a readahead consumption of replication feeds for MySQL, and an automatic failover implementation for database slaves among other things.

Internship

2007 - 2007 **Programmer**, *Indygo Software Systems*, Bangalore.
Primarily worked on an application of speech recognition to phones with JTAPI using CMU Sphinx, and primarily dealt with interoperability.

Publications

- *SOMGPU: Self Organizing Maps on a Graphical Processing Unit for Pattern Classification*: Published at IEEE Congress on Evolutionary Computation (CEC) which was part of IEEE World Congress on Computational Intelligence (WCCI) 2008. *Cited by more than 10 publications.* dx.doi.org/10.1109/CEC.2008.4630920
- *GNeuron: Parallel Neural Networks with GPU*: Presented at 14^{th} International IEEE Conference on High Performance Computing (HiPC) 2007. hipc.org/hipc2007/posters/GNeuron.pdf
  Individual author in both.

Skills

Languages C, Python, Perl, C++, Shell scripting, Haskell, LaTeX.
Operating Systems Linux, FreeBSD
Quite well versed in Linux kernel and GNU/Linux internals, virtualization platforms like KVM, VCSs like git, bzr and hg; also have worked on, and contributed to several FOSS projects, and possess an intimate knowledge of MySQL internals (Galera/InnoDB/XtraDB/WSREP), XtraBackup, Percona Toolkit, memory-mapped databases, and distributed hash tables.

Projects

For more/recent FOSS projects visit wnohang.net/code and ronin13.github.com

Percona XtraDB Cluster Have been responsible for several feature-rich stable releases of the product, and architecting newer SST (State Snapshot Transfer) mechanisms.

Linux Kernel Involved in development of different areas of Linux kernel including but not limited to – filesystems (XFS, BTRFS), VM (Readahead), kbuild, security, I/O; many of which are upstream, testing them with KVM testing harness and finally, reviewing others' commits. My git tree is here `http://goo.gl/KFfjs` with corresponding topic/feature branches.

MySQL I have worked on areas like fallocate for InnoDB tablespace extension, increment for Innodb single tablespace (located at `http://goo.gl/pgly0`), and also made several contributions to Percona Server, Xtrabackup and Percona Toolkit.

Neural Cryptography Implementation involves synchronization of two TPM (Tree Parity Machines) for secure key exchange with faster convergence, useful in cryptographic applications, implemented in Python (NumPy).

GNeuron Neural network library making use of GPU (Graphical Processing Unit) for parallel computation (GPGPU) with nearly 5x speedup over its sequential counterpart.

GPUSOM Pattern Classification with Kohonen's Self Organizing Maps (SOMs) on GPUs using Accelerator, first of its kind in GPGPU ecosystem.

Mushacadotnet Adds an additional degree of freedom to computer mouse. This makes use of RawInput Win32 API and MouseHooks, and is useful in scientific simulations/visualizations.

Getmail Extended the mail retrieval platform with a two-legged XOauth implementation; also fixed the ENOSPC handling with filesystems like ext4, and trimmed the fsyncs to reduce CPU load.

Mounty/Xail A Linux utility to manage plug-n-play external drives based on inotify and udev, and provision for custom mount configuration. Xail is a window manager written in python to provide toggle-based window switching with support for hooks.

STM An implementation of lock free solution to *Dining Philosophers* problem with Software Transactional Memory (STM).

Achievements

- Presented talks at database and FOSS conferences - PLMCE 2013, PLMCE 2014, FOSDEM 2013 MySQL Devroom, Linux Conf Au 2014 Sysadmin miniconf, LCA 2014 Continuous Integration miniconf.
- Won 2^{nd} place in the event Mushaca, a three dimensional mouse design event. It is the first driver-less implementation of Mushaca.
- 2^{nd} place in Verisimilitude, an algorithm competition conducted during Engineer '07, an annual university tech fest.
- Also received the IEEE CIS Conference Travel Grant in the year 2008.
- Authored a scientific essay on the nature of *Time and Entropy* titled *Your Time and My Time and Time*. This was part of *FQXi The Nature of Time* contest.
- Mention of my work in the newsletter of ACM Special Interest Group (SIG) on Genetic and Evolutionary Computation - SIGEVOlution.
- Secured 9^{th} rank in Karnataka Common Entrance Test (CET) for Engineering in 2004, in which more than a hundred thousand people compete.