Ronak Kogta

Interests

Parallel Algorithms, Computer Architecture, Numerical Algorithms

Projects

On measures of stability and accuracy in coumpute-intensive algorithms [Ongoing]

In this project, we aim at figuring out criterias involved in achieving optimal configurations for a given architecture such that a reasonable assertion can be made on stability of algorithm.

Modeling Pipelined Parallelism on Heterogeneous Architectures [July-Dec 2011]

In this project, task parallel programs were studied, such that each task can be solved on different architectures. So with the help of hardware parameters, an allocation strategy was devised.

Hybridization of Prefix Sum Algorithm [Jan-May 2012]

Designed and implemented a parallel algorithm for CUDA(gpu+cpu) to find prefix sum of an array using double buffering and askew Algorithms in GPU and cache oblivious algorithms for CPUs

RAMFs: A simple volatile filesystem [Completed]

In this project, we used FUSE to implement a filesystem in user-space, which was designed to use virtual memory space for all operations

Pedestrian Detection [Independent Project, July 2010]

In this project, we used HOG/SIFT descriptors of an image to detect humans in images, with the use of linear SVM learning model. The goal was to build power-efficient detection system, and come up with good features of images

Work Experience

Openwall Summer of Security [Summer 2013]

Here, I'm working on improving John the ripper support for AES encryption on OpenCL platform. Before that I worked on low level description of opencl code, and ways to tweak with it

Research Assistant at CVEST Lab [2011-2013]

Teaching Assistant [2011-2013]

1. Operating Systems by Prof. P.Krishna Reddy, Aug-Dec, 2013

2. Computer Networks by Prof. Bezawada Bruhadeshwar, Jan-May, 2013

3. Operating Systems by Prof. Vikram Pudi, Aug-Dec, 2012

4. Modern Computer Architecture by Prof. Govindraju, Jan-May, 2011

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Education

2011 – Present	**Master of Science** Parallel Algorithms, Computer Arch. *CVEST, IIIT Hyderabad*
2007 – 2011	**Bachelor of Technology** Computer Science *IIIT, Hyderabad*

Achievements

2010,2012	*Got top places in hackathons(Yahoo Hacku) and Felicity's breakin*
2010	*Got an Scholarship for International Congress of Mathematicians*

Skill Set

Operating System	*GNU/Linux*
Languages	*C,Python,bash*
Environment	*Vim,Eclipse,Emacs*
Libraries	*CUDA, OpenCL, OpenMP, Intel TBB*

Research

Workshop	HeMPA 2011, Hyderabad MSR Winter School for TCS, Hyderabad, 2012
Posters	Workshop in Hybrid Algorithms HiPC 2011, On Eigen Value computation using MPI for GPU and CPU
Papers	On Hybrid views of Prefix Scan [Under Review]

Hobbies

Books	I like books on philosophy and fantasy, and read manga
Others	I like to run and listen to instrumentals