Manjukumar Patil

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EDUCATION

The Ohio State University, College of Engineering — Columbus, United States
Masters in Computer Science and Engineering **(GPA: 3.54/4.0)** — Aug 2017 - May 2019
Visvesvaraya Technological University, R.V. College of Engineering — Bengaluru, India
Bachelor of Engineering in Computer Science and Engineering **(GPA: 3.97/4.0)** — Sept 2010 - May 2014

TECHNICAL SKILLS

Programming Skills: Java, C++, C, Python, ARM, R, JavaScript, HTML, PHP, CSS, Ajax, MySQL, Git, Moodle
Operating Systems: Linux, Android, MS Windows, Mac OS
IDE: Visual Studio, Android Studio, Eclipse, RStudio, RVDS, MATLAB, jQuery, CUDA, PyCharm

EXPERIENCE

The Ohio State University — Columbus, United States
Graduate Research Associate — Sept 2017 - present

- Designed and developed a STEM educational curriculum demonstrating parabolic equations using drones through Face Detection algorithm. Implemented DJI drone drivers for middleware, and used JavaScript, PHP for the web interface
- Developed the educational portal, https://ctme.ehe.osu.edu, as a part of NSF (National Science Foundation) project, to enhance the quality of learning in Algebra for high school children, through interactive and visualized web interface
- Data analysis of genes and metabolites through RaMP database, the collection of medical databases such as HMDB, KEGG, Reactome and WikiPathways, to detect early lung cancer cells using MySQL and R

Samsung Electronics — Bengaluru, India
Senior Software Engineer — Mar 2016 – Aug 2017

- Designed and implemented DSP kernels on Samsung-Core processor for Gesture Recognition IP which resulted in a performance gain of 50% and a power boost of 30% in comparison with traditional CPU on S8 device
- Developed Face Detection IP using HOG Image Processing technique for feature extraction and AdaBoost Machine Learning for feature classification. Designed efficient 2D spatial cache access method for memory loop-up

Samsung Electronics — Bengaluru, India
Software Engineer — Jun 2014 – Mar 2016

- Developed over 10 ARM/NEON and intrinsic assembly solutions to achieve data-level parallelism along with multiple p-threads implementations to achieve thread-level parallelism for several vision applications such as; Face Detection with performance efficiency of 30%, Face Beautification with efficiency of 70% and Gesture Recognition with efficiency of 50%
- Maintained Agile technologies in the team by organizing sprint planning, stand-up meetings, and retrospective meetings

INTERNSHIP

Samsung Electronics — Bengaluru, India
Research Intern — Jan 2014-Apr 2014

- Developed an Android application for improving the power efficiency of the smartphones by recognizing the deadlock systems and memory leaks in any android device. Application was developed in Android Studio using Java
- The tool kept track of running apps on device, allocated the required power, thus ensuring power efficiency in the phone

PROJECTS

Autonomous UAV Drone System — Aug 2017

- Benchmarked the Face Detection IP on *DJI Spark Drone* running on ARM processor using tools such as Perf, RAPL, systrace and ftrace. Analyzed cache performance and CPU parameters to optimize the algorithm for maximizing cache utilization

Parallel Computing — Sept 2017

- Designed and developed Edge Detection algorithm using Sobel operator. Implemented and analyzed multi-threading across multiple parallelization methods such as pthreads, openMP, CUDA and MPI for different amount of threads

Branch Prediction Championship — Sept 2017

- Implemented GSHARE branch predictor to accurately predict the outcome of the branch instructions. The predictor is able to achieve the accuracy of 97.2% with 8KB global shared branch history table

Lexical Analyzer and Parser — Oct 2013

- Implemented the first two stages of the compiler to break down the C code into tokens and generate parser tree

Airline Database Management System — Nov 2012

- Designed and Developed the web application to manage airline reservation with features to book, cancel and reschedule the flights using HTML, PHP, CSS, MySQL and Apache