Guru Prasad Srinivasa

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Objective

To continuously upgrade my skills (Technical, Management and others) in order to excel in delivery and add value to the team, organization and end customer, thus ensuring consistent growth.

Education

University at Buffalo, The State University of New York	**Aug '13 - Present**
Ph.D. Candidate, Computer Science and Engineering	**GPA: 3.3/4.0**
Focus: Operating Systems	

University at Buffalo, The State University of New York	**Aug '11 - June '13**
Masters of Science in Computer Science and Engineering	**GPA: 3.4/4.0**
Interests: Software Engineering, Android, Cloud Computing, Distributed Systems	

SRM University, Tamil Nadu, India	**Aug '07 - May '11**
Bachelor of Technology in Computer Science and Engineering (Top 25% of the class)	**GPA:7.4/10.0**

Experience

Research Assistant – University at Buffalo (Advisor: Dr. Geoffrey Challen)   **Jan '13 - Present**
- Studying power-agility on the Android platform
- Modified linux perf module to gather statistics at very high granularity (per thread/process)
- Wrote pseudo cpufreq drivers for ARM Realview and VersatileExpress platforms.
- Working on modifying scheduler to use task priority to restrict system inefficiency

Teaching Assistant, University at Buffalo   **Spring '13, Spring '14**
- CSE421 - Operating Systems Internals

QA Intern, **Pendula IT Pvt Ltd**   **Jun '10 - Oct '10**
- Helped implement CMMI level 3 standards
- Documentation of processes and standards
- Requirements specification standards
- Java coding practices and standards

Network Intern, **Religare Technova IT Services**   **Dec '09 - Jan '10**
- Automated the network configuration backup – reduced a total effort of *16 man-hours to below 1 hour*

Research Projects

Power Agility

System aimed at improving energy utilization in computing devices. The system exposes unique interfaces between application-OS and OS-hardware for applications to communicate resource requirements to OS. The OS scales resource requirements based on process priority and configures hardware accordingly. This ensures that the application uses only the resources that it requested. The hardware runs as fast as possible under given constraints.
- Implemented support for CPU and memory frequency scaling on Gem5
- Wrote cpufreq and 'memfreq' drivers on Linux for Gem5
- Added registers and logic to Gem5 to simulate ARM PMU
- Wrote validation tests for CPU frequency scaling using inline assembly
- Modified perf to enable periodic sampling of performance counters
- Working on modifying scheduler to use task priority to restrict system inefficiency

Worldtree (Github)
Worldtree is a constrained random map generator. User specifies a set of constraints and properties to the engine. Engine generates a random world that satisfies all specified constraints.
- Established grammar for specifying constraints and properties (based on SPARQL)
- Implemented parser for the above grammar in JavaCC
- Implemented optimization techniques to optimize constraint satisfaction and query resolution

Publications

The Mote is Dead. Long Live the Discarded Smartphone!   **[HotMobile 2014]**

Academic Projects

DataDecoy – Protecting private location data from third-party advertising (Github), Fall 2012
DataDecoy is an Android platform modification that allows users to circumvent the all-or-nothing approach taken by Android applications as well as the Google Play Store. DataDecoy allows users to dynamically decide whether an application has access to their private information. For example, using DataDecoy, a user can prevent Angry Birds from accessing his or her location information.

Implemented a Distributed Hash Table (DHT) in Android platform, Spring 2012:
Implemented DHT and "Chord Algorithm" using Android SDK for multiple virtual devices.
Delivered an application with which a user could store data in a distributed manner across multiple android devices with fault tolerance and redundancy.

Studied the efficiency of *k-top queries* in SQL, Spring 2012:
Implemented a system in Java which emulated Indexing of tables using B+-trees. Designed and developed an SQL simulator (in Java). Studied and compared the performance characteristics of the Threshold algorithm versus the naïve approach.

Implemented a simple Web Server in C, Fall 2011:
Implemented a simple multi-threaded web server in C that handled HTTP1.0 messages. Designed and developed a daemon application that served basic web pages and images.

Evaluated MAC random transmission protocol using NS2, Fall 2011:
Studied the performance characteristics of a newly implemented MAC protocol to identify the threshold for efficient packet duplication.

Designed an extension to existing Gaumard HAL healthcare simulator, Fall 2011:
Participated in designing a system to assist faculty in making healthcare simulations more realistic by implementing an interface that allowed them to control and feed simulation parameters to remote devices such as Thermometers and Blood Pressure cuffs.

Software Skills

- Experienced with Linux kernel development
- Experienced with Gem5 simulator
- Proficient in C, Java, Python, JavaCC
- Experienced with the Android platform
- In-depth knowledge of operating systems

Awards and Achievements

- Awarded Certificate of distinction in the 2nd National Cyber Olympiad
- Awarded Silver Merit in the 4th National Cyber Olympiad

Hobbies

- Violin
- Football
- Online gaming