

ASIM SHANKAR

OBJECTIVE: Seeking a full-time software development position starting summer 2005

EDUCATION

- M.S. in Computer Science. University of Illinois, Urbana-Champaign
Expected June 2005. Current CGPA – 3.95/4.0
- B.Tech in Computer Science and Engineering. Indian Institute of Technology (IIT), Kanpur
Graduated in May 2003 with a CGPA of 3.3/4.0

EXPERIENCE: VERITAS Software, Mountain View, CA. Summer intern – 2002, 2003, 2004

Log Analysis (2004)

- Designed a framework to aid in root cause analysis of failures that have causally related log entries in multiple application and OS subsystems
- Implemented a generic log parsing facility and temporal and context-sensitive correlation of log entries
- Created a prototype for the correlation engine, GUI and correlation specification language
- This tool is intended for use by Customer Support and Engineering in analyzing field escalations

Regular Expression Engine (2004)

- Enhanced the Perl Compatible Regular Expression (PCRE) library to allow it to match patterns spread over non-contiguous memory buffers
- To be used in an in-kernel regular expression engine for deep-packet inspection of HTTP packets
- Required very quick understanding of PCRE code as implementation was done within a week

Simulator for VERITAS Cluster Server (VCS) (2002)

- VCS is VERITAS' high-availability framework for enterprise applications
- I developed a simulator which allows a 32-node cluster to be simulated on a stand-alone machine
- Simulator now shipped with VCS and used for marketing demos, training, "what-if" analysis and debugging
- Project required understanding VCS architecture and enhancing it with a simulator design that reused core engine logic modules

Prototype for next generation VCS (2003)

- Next generation VCS moves from a homogeneous, replicated-state to a heterogeneous, client-server model
- I developed a prototype which was demonstrated on a 128-node cluster of both Windows and Linux
- The prototype has since turned into a committed project

UNIVERSITY PROJECTS

Distributed Scalable Java Operating System (DSJOS) (Research Assistant)

- DSJOS is a distributed Java Virtual Machine (JVM) that provides applications a shared-memory view of a cluster
- Implemented modules to migrate threads and internal structures between nodes that act as a single JVM
- With this we are now focusing on dynamic load-balancing and cluster membership protocols

Power-Aware Storage Cache Management

- Designed and simulated a power-aware storage cache management algorithm along with another student
- Simulations showed up to a 14% decrease in disk energy consumption in large storage systems
- Work was published in the 18th annual International Conference on Supercomputing (ICS'04)

3D Trajectory Generation (Undergraduate Thesis)

- The goal of this project was to generate 3D trajectories of actors in a video sequence
- Consisted of face detection (using neural-networks and Haar-features) followed by mean-shift tracking
- Camera parameters used to convert the (x,y) and scale of face in the image to real world (x,y,z)

User-Level Process Restarting

- Developed a user-level system for restarting a Linux process
- Check-pointing done by forcing a core dump
- The program to be restarted required no modifications

Neural Network Library

- Designed and implemented a general-purpose library for various neural network models (in C++)
- This open-source project is now available at <http://annie.sourceforge.net/>

Online Academic Registration System (OARS)

- Designed and developed a web-service for course registration at IIT Kanpur
- OARS has been in active service at the institute for the last three years
- It uses ASP and connects to an Oracle database at the back-end

TECHNICAL SKILLS

Languages:	Proficient and experienced in C/C++, Java Experienced with Perl, Python Familiarity with Visual Basic, ASP, many scripting languages
Platforms:	Comfortable with both Windows and Unix-based platforms Comfortable with Linux kernel programming, especially the networking stack
Tools & Technologies:	SQL, Java RMI, Java Swing, XML, ANTLR, User-mode Linux, Visual Studio, gdb

EXTRA-CURRICULAR ACTIVITIES

- Founding member and Treasurer of ACM Chapter at IIT Kanpur
- Student Counselor – Sophomore year
- Member of the basketball team of IIT Kanpur in 1999, 2000 and 2002
- Established “Information Management” cell for the cultural and technology festivals of IIT Kanpur. The cell automated various tasks related to hosting teams from other colleges

OTHER NOTES

- Linux Enthusiast – Enjoy experimenting with kernel patches, tools, utilities and distributions
- Quick learner – Can easily pick-up technical skills and techniques that I am not currently familiar with