Vaidyasubramanian Chandrasekhar

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Objective
To obtain a full-time software design and development position that enhances my programming skills

Summary
- Experienced in object oriented design methodology in various programming languages, and drawing specifications for products
- Experienced in designing test cases and demo programs for software and handling its updates
- Proficient in software design, testing and visualization programming using C++
- Creative problem solver and possess strong inter-personal communication skills

Education
University of Illinois at Chicago - Masters in Computer Science GPA- 3.75/4.0 (Dec 2004)

Bharathidasan University, India. Bachelors in Computer Science and Engineering. May 2002, Rank- 2/ 78

Work Experience

General Electric Medical Systems - Signal Processing Engineer (Intern). - Summer 2003
  – Developed a image viewer tool and a novel image presentation technique with clinically relevant contrast, highlighting the differences in x-ray images acquired at different times using IDL, C++ (http://www.evl.uic.edu/vchand2/ge.bmp).

Electronic Visualization Laboratory at UIC - Research Assistant, Spring 2003 -Present
  – Implemented observer pattern, for a collaborative application using C++ with one-to-many dependency between objects
  – Implemented algorithm for pre-fetching and caching of large data sets based on user history
  – Designed test cases and demo programs for Quanta, an adaptive networking toolkit
  – Synchronized a cluster of computers handling volume visualization across tiled displays using C++ and MPI
  – Implemented an octree based recursive sub-division algorithm for volume sculpting

Great Cities Urban Data Visualization Lab at UIC - Research Assistant- Fall 2002 - Spring 2003
  – Designed surveys and sketch tools using swing, servlets in Java and ASP
  – Implemented a secure discussion forum with tools for chatting and messaging using ASP

Masters Thesis Work
Collaborative volume sculpting and Implant modeling: The system aims at developing a cranial implant using haptic force feedback in augmented reality (PARIS™) and using a PHANToM. The work involves design and implementation of volume sculpting algorithms. The algorithms are designed for multiple clients to work simultaneously. http://www.evl.uic.edu/vchand2/thesis/index.html

Projects

Boids
Designed and implemented a boids animation algorithm simulating the behavior of two schools of fishes when facing a predator using C++

NFS implementation
Implemented a remote file system using TCP in C++. There is a two way authentication and the server logs the errors due to wrong requests

Reliable UDP
Designed a reliable datagram protocol for packet transmission across networks using Java indicating and correcting corrupted packets, lost packets, out of order packets and repeated packets

Concurrent server testing
Implemented a test for a concurrent server with a client/server and monitor system using C++. The program was used to find the maximum and optimal number of clients a server can handle in parallel and also studied their throughput.

Group management in a security model
Designed a group management tool, handling the group, user management module and inter-group access, for the kernel-sec (a UNIX kernel security model) project using Java.

Routing algorithm
Designed and implemented a distance vector routing algorithm on directed graphs using Java. The nodes of the graph are routers, a thread per edge to move data between nodes along that edge.

Shortest path algorithm
Designed and implemented an algorithm to calculate the shortest path between any two points based on two cost considerations - the time and distance - using *C++*

Defenda and Asteroids
Designed and implemented the 'Defenda' and 'Asteroids' games with lighting and texture mapping using OpenGL, C++. The player is provided six degrees of freedom and multiple views of the scene

Conferences and Workshops
- Provided a demonstration of the geowall at the IEEE VR' 04 demo night at UIC, Mar-2004
- Showcased the "Augmented Reality Immersive System" used for pre-surgical planning in the Radiological society of North America in Chicago (RSNA) - Dec 2003

Publications
- L. Renambot, A. Rao, R. Singh, B.Jeong, N. Krishnaprasad, V. Chandrasekhar, N. Schwarz, A. Spale, C. Zhang, G. Goldman, J. Leigh, A. Johnson - *Scalable Adaptive Graphic Environment* - WACE 2004, Nice, France.
- V. Chandrasekhar, A.Nayak, B. Lopez - *How to build a Geowall* - Access Grid Union -April 2003.

Related Course Work

Object Oriented Programming Languages	Database Management System
Software Engineering	Computer Algorithms
Computer System Security	Operating Systems
Introduction to Networking	Computer Graphics
Data Structures	Computer Animation

Skill Set

Languages	C++, C, Java, Visual C++, Visual Basic, Smalltalk
Platforms	Windows 9x, Windows XP, UNIX, Linux
Toolkits	Matlab, IDL, FLTK, MPI, Quanta, Swing
Graphics	OpenGL, Open Inventor, VTK, VRML
Others	Socket programming, Cluster computing, SQL, RMI, CVS

References
Furnished upon request