Vaibhav Saxena

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Objective

To obtain software engineer position preferably in the Medical Imaging field that allows me to contribute to the development of various Medical Systems and where my technical skills will be fully utilized and further developed.

Education

Indian Institute of Technology Delhi (IIT), New Delhi, India
Five year Integrated Master of Technology in *Mathematics and Computing*, May 2003

UP Intermediate and High School Board Allahabad, Uttaranchal, India
Senior Secondary School Examination (XII), 1998

UP Intermediate and High School Board Allahabad, Uttaranchal, India
Secondary School Examination (X), 1996

Technical Expertise

Computer Languages	C, C++, Java, MATLAB, SML, HTML, Javascript
Assembly Language	Assembly language programming in MIPS architecture (on spim simulator) and for 8086 microprocessor, Assembly language programming for HC08 microprocessor (Motorola family) (on pemicro simulator)
Operating Systems	Windows 9X/NT/2000/ME/XP, Linux, Sun Solaris
APIs/Libraries	OpenGL, Qt, Imlib
Languages	Hindi, English, Deutsch (Beginner's level)

Professional Experience

Read-Ink Technologies Pvt. Ltd. — Bangalore, India
Software Engineer — July 2003 – present

Job Description –
Responsible for the design and implementation of a part of the online handwriting recognition system. The system works in various modules analyzing features and characteristics of a handwriting. Based on these observations the written character is recognized using the strokes it is made of.
Technologies – Matlab, VC++ Platform –Windows

Project Experience

1) **Final Year Project** — August 2002 - May 2003
Department of Mathematics, IIT Delhi — New Delhi, India

Project - *Embedding Intelligence in e-learning model SCORM*.
Description -

- Developed an Artificial Intelligent System (AIS) for semantically analyzing and understanding the knowledge represented in the English text.
- Incorporated this AIS in a web-based e-learning model Sharable Content Aggregation Model (SCORM), to answer the real time queries of the user on the course content, creating a real class room like situation.
- Implementation done in C, Perl, Javascript.

2) **Volume Visualization Intern** May 2002 - July 2002
Girona Graphics Group, Universitat de Girona Girona, Barcelona, Spain

Project – **Volume Visualization of Medical Imaging Dataset using 3D Texture Mapping.**
Description-

- Designed and implemented an application along with its GUI to obtain the 3D volume visualization of medical imaging (CT/MRI scan) raw dataset using the 3D texture mapping in OpenGL.
- Project involved all the software development steps like problem definition, design, analysis, implementation, testing etc.
- Implementation was done in C++ and GUI was created using Qt library.

3) **Mini Project** August 2001 - November 2001
Department of Mathematics, IIT Delhi New Delhi, India

Project – Developing a Dynamic Hybrid Coding of 2D Images using Wavelets.
Description-

- Dealt with various Transform Domain and Predictive Coding based Compression Schemes
- Dealt with Hybrid Coding (combined Predictive and Transform Coding) of 2D Images modeled as Time Varying-Auto Regressive (TV-AR) process using Wavelet theory.

Other Selected Projects

- Implemented Marching Cubes Algorithm for rendering an isosurface from 3D Dataset. [C++ and OpenGL]
- Design and Implementation of a facial morphing system. [C and OpenGL, Imlib]
- Virtual Walk through a house.[C++ and OpenGL]
- Simulation of M/M/1 queuing system. (C++)
- Implementation of a 1 Bit Sliding Window Protocol.[Using Unix Domain Sockets, C]
- Design of a Lexical Analyzer and Parser. (SML)
- Implementation of Calculator using Stack Machine. (SML)
- Simulation of different CPU Scheduling algorithms like FCFS, SJF, Priority Based Preemptive and non-Preemptive, Round Robin etc. on processes. (C++)
- Design and Implementation of PAINT BRUSH [Java AWT] along with its complete design document.
- Implementation of B and B+ trees for storing and manipulating user data. (C++)
- Assignments based on IPC techniques like sleeping barber problem using System V semaphores and Dining Philosopher Problem using monitors. (C)
- Assignments Based on POSIX pthreads, POSIX semaphores and Sockets. (C)

Scholastic Achievements

- Secured All India Rank 21 with percentile of 98.07 in Graduate Aptitude Test in Engineering (GATE) 2002 in Mathematics.
- Recipient of GATE assistantship at IIT Delhi.
- Obtained certificates in various sports and science quiz events while in school.

Relevant Courses Done

Computer Science/Electrical Background:
Data Structures, Computer Architecture, Algorithm Design and Analysis, Operating Systems, Programming Languages, File Structure and Information System, Computer Networks, Software Engineering, Computer Graphics, Image Processing, Discrete Mathematical Structures, Numerical Methods of Scientific and Engineering Computation, Digital Electronic Circuits (Elec.), Signals and Systems (Elec.).

Mathematics Background:
Probability theory and Stochastic Processes, Optimization Methods and Applications, Statistical Methods and Algorithms, Graph Theory, Algorithms in Mathematical Programming (Advanced Optimization), Algebraic Geometry, Wavelet Analysis, Fuzzy sets and Applications.