
Ajit Datar
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Professional Objective

To work in a research and/or development position in the Computer Science Field.

Employment History

Summer internship at Microsoft IDC [June 2004–August 2004]

- **RRAS UI changes for Win 2003 Server** - Updated Routing and Remote Access Service UI on Windows 2003 server according to the changes required for the next maintenance release of the OS. Modifications were made to the RRAS snap-in, property sheets and the API. Used C++ and Win 32 API.

MTS (Software) at Persistent Systems Pvt Ltd, India [March 2003–August 2003]

- **3-D terrain rendering using quadtrees** - Developed a cross platform OpenGL based 3D terrain rendering engine which used quadtrees for processing the terrain data. It was developed for Navionics. Developed the proof of concept, rendering engine and the viewer frontend. Achieved good data compression and realtime rendering of terrain. Project was mainly developed on linux and windows.

Software Developer at Zensar Technologies, India [October 2002–March 2003]

- **Content Management System based on .Net** - Worked on testing and screen development on Aqueduct Content Management System. Worked with ASP.Net and VB.Net and MSSQL server.

Education

MS (Master of Science) in Computer Science at University of Minnesota, Duluth [August 2003–July 2005]

Overall GPA: 3.8 out of 4.0

Subjects: Advanced Machine Learning, Advanced Computational Logic, Digital Signal Processing, VLSI, Digital Image Processing, Natural Language Processing, Advanced Computer Architecture.

- **Thesis - Generating hyperbolic patterns for regular and non-regular p-gons** - Improved and implemented algorithms to generate hyperbolic designs based on the work of Dr. Douglas Dunham. Developed HyperArt -- a C++/Qt based cross-platform programming framework and application to experiment with repeating hyperbolic tessellations. See <http://ajitomatix.com/Projects/HyperArt> and <http://hyperart.sourceforge.net> for details.
- **Essay grading and Analysis Logic** - Designed, developed and deployed EGAL -- a system to grade essays based on four criteria - Gibberish Detection, Relevance assessment, Factual statement identification and Factual accuracy. Provides a CGI/Perl web interface and Perl modules for the four criteria and an installer. Implemented the factual accuracy module. Responsible for overall design, coordination and deployment. The implementation details and sourcecode is available at <http://sourceforge.net/projects/egal>.
- **Fast Multiresolution Image Querying** - FMIQ is an implementation of a paper of the same title. Developed in python, it is a search technique which uses Haar wavelet transform to compute signatures of the images in its database. These are then used to do a image query by example or by a rough sketch. Complete source code is available at <http://ajitomatix.com/Projects/FMIQ>

BE (Bachelor of Engineering) in Computer Science at Pune University/BVCOE [1999–2002]

Subjects: Data Structures and Algorithms, Computer Graphics, Databases, Operating systems, Computer Networks, Compilers, Object Oriented Design, Software Engineering.

- **OMR and Devanagari OCR** - Designed and implemented an **Optical Mark Recognition** system to grade multiple-choice style questions. The system

placed minimum restrictions on the scanned document.

Experimented with **Devanagari Optical Character Recognition** system using a 3-layer, fully connected backpropagation neural network. Successfully converted scanned Devnagari text to electronic format with an accuracy as high as 90%. Both the projects used C++. MFC was used for the GUI.

Software Development Skills

Computer Languages: C, C++, Python, Perl, XML, HTML.

Compilers/Frameworks/Tools: Qt, MFC/Win 32, GNU Dev tools, cvs.

Platforms: Windows 98, Windows XP, Windows 2003 Server, Linux, Solaris.

Graphics Programming: OpenGL.

Hobbies

- Acoustic Guitar
- Linux
- Hiking

Miscellany

Latest version of this document can be obtained from <http://ajitomatix.com/Resume>.

References available upon request.

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