Ajay Bathija

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Education:

Master of Science, *Computer Engineering* (June 2003)
Drexel University, Philadelphia. **GPA**: 3.80

Bachelor of Engineering, *Electronics Engineering* (August 2001)
Thadomal Shahani Engineering College, Mumbai University **GPA**: 3.75

Computer knowledge:

Database:	• SQL	• MS Access	• Oracle	
Programming Languages:	• Visual Basic • .Net	• C/C++ • JAVA	• Visual C++ • C#	• HTML • Perl
Operating Systems:	• MS Windows 9X/2000/NT 4.0/XP		• UNIX	• DOS
Tools/ Utilities:	• MS Office • Photoshop	• Dream Weaver • Matlab 5.0	• Microsoft FrontPage	

Work Experience:

Consultant, *MRDS Inc., Philadelphia.*: *(August 2003 – December 2003)*

- **Developed** an **Artificial Intelligent** Search Algorithm – to optimize search for the locations of contaminants, with minimum complexity using multiple resolution and advanced heuristics.
- Developed software to determine the source locations of Carbon Tetrachloride in ground water system.

Research Assistant, *Drexel University.*: *(August 2001 – June2003)*

- Worked with the Multiple Resolution Research Team to develop *Multi-resolution* methods of learning.
- **Developed** methods (using advanced heuristics like Dijkstra's) of providing **artificial intelligence** to various kinds of systems.
- Languages used – VC++ / Visual Basic / C/C++.

Internship, *Western Railways, Mumbai, India*.: *(June 2000 – June 2001)*

- Introduced the concept of **Automation and Centralization of Signaling Systems**
- Developed a DEMO using C++ on UNIX platform

Training Engineer, *Silicon Electronics, Mumbai, India.*: *(October 1998 - February 2000)*

- Worked part time on assembling, servicing and maintaining computers on service calls.
- Worked part time as a customer representative for software and hardware assistance.
- Reduced customer complaint calls by 10%

Projects:

Planning of autonomous vehicle for capturing an adversary vehicle *(in VC++ and VB*): (April 2002 – July 2003)

- **Led a team of four members**.
- **Designed** and **simulated autonomous vehicle** based on artificial intelligence to protect any given terrain.
- **Thesis** "Planning the minimum cost path in a multiple traversability terrain at lower resolution."

Elementary discrete optimization by searching *(in C/C++):* (October 2001 – April 2002)

- **Developed an algorithm** for finding the fastest route from City A to City B in least computing (searching) time
- Developed a constrained Dijkstra's Algorithm, which provided dynamic curve for each link between the two cities.

Carry look ahead adder *(in Cadence):* (September 2002 – December 2002)

- Analyzed various types of 4 bit adders.
- **Designed** a fast ***4-bit Adder*** and simulated using *Cadence Software*.

Encoding/Decoding techniques for telecommunication *(in Matlab)*: (January 2002 – March 2002)

- Simulated the various techniques of encoding/decoding of data messages for efficient transmission
- *Languages used -- MATLAB Software* was used for simulation.

Publications and Presentations:

- *Tessellating and Searching Uncertain State Space for Multi-resolution Systems*, PerMIS'02, National Institute of Standards and Technology, Gaithersburg, MD, August 2002.
- *Multiresolutional Planning: Using the Randomized Tessellation of the State Space*, Proceedings of ISRA'02, USA, September 2002.
- Analyzed Res*ource Reservation Protocol* for the *Internet services* worldwide and proposed a *Resource Reservation Protocol* based on Modified Dijkstra's Algorithm.
- Presented a paper on 'Smart Cards' for IEEE (SPAAC) and received third prize.

Course Work:

- Data Structures and Algorithm I and II
- Computer Network Design I, II and III
- Principles of Computer Engineering. I, II and III
- Telecommunication Engineering I and II
- Applied Computer Architecture
- Cryptography and Network Security
- Digital Integrated Circuit Design
- Telecommunication Networking

Societies/Committees and Scholarships:

- Awarded **Research Assistantship** at Drexel University. (Electrical and Computer Engineering Dept.)
- **Fully funded** by Drexel University throughout graduate study.
- Indian Society for Tech Engineering: Committee Member for 3 years and Publicity Manager for 1 year.
- IEEE: Member for one year.
- Institution of Engineers: Member for 3 years.
- Secretary of PRAGATHI, the Indian student's association in Drexel University.
- Rotract Club of Sea Coast, India: on the Board of Directors for a year and member for 2 years.