IRENA PASCHENKO

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Work Experience

Senior Software Engineer, Zazzle.com **December 2005 - Present**
Affiliated with ZCORE - Server Infrastructure Team and CAT (Creation Activity Track)

Research Assistant, Stanford University **June 2003 - October 2005**
(See Research section).

Teaching Assistant, Stanford University
Experimental Robotics, Prof. O Khatib **Spring 2004, Spring 2005**
Spearheaded a major upgrade of the course curriculum. Led the design and implementation of a new client-server simulation and robot control software used in the course projects. Assisted students in their labs and projects, maintained a web-page, and prepared lectures (C++, Linux/QNX).

Introduction to Automata and Complexity Theory, Prof. R. Motwani **Spring 2003**
Helped students understand the material by answering their questions in office hours and via email; graded home works and exams.

Software Design Engineer, Microsoft Corporation **January 2001 - January 2003**
Office.Net Imaging Services Group.
Involved in the technical design and implementation of a brand new client-server application for managing digital images. Responsible for the SharePoint and Office integration, the storage engine and the image cache. Acquired knowledge of the entire software development cycle. Maintained and extended legacy code in PowerPoint and Outlook. (C++, XML, SOAP, C#).

Coop Pre-Professional Software Engineer, IBM T. J. Watson Research Center **Summer 2000**
Manufacturability Enhancement Applications Department.
Designed and implemented efficient algorithms for manipulating complex, hierarchical geometric layouts in CAD. Extensive work with algorithms and data structures (C++).

Software Design Engineer Intern, Microsoft Corporation **Summer 1999**
WorkGroup Web Group, FrontPage.
Developed ActiveX Controls in C++. Gained knowledge of FP Object Model and Microsoft internal development tools, exposure to COM (C++).

Research Experience

Motion Planning in *C*-Space *with Oussama Khatib, Stanford AI Lab* **Summer 2003 - present**
Extension of the Elastic Strips Framework to contact/constraint space, as a method for local modification of a robot motion plan.

SAI - the dynamics simulation and control engine of robotic worlds. Key person in the development and maintenance of this large software project.

Architected and supervised several team projects.

Data Structure Design *with Ulrich Finkler, IBM T.J. Watson Research Center* **Summer 2000**
"Multidimensional Interval Trees" , IBM Research technical report, 2000. pdf

Computational Geometry *with Joseph O'Rourke, Smith College* **1998-2001**
"Partitioning Orthogonal Polygons into Fat Rectangles", co-authored with J. O'Rourke and G. Tewari, Proc. of the 13th Canadian Conference on Computational Geometry, 2001. pdf

"Metamorphosis of the Cube", co-authored with E. and M. Demain, A. Lubiw, J. O'Rourke, Proc. of the ACM Symposium on Computational Geometry, 1999. html

Possibility of folding a polytope from a piece of paper, P-time solution, 1999.

Dissections in 2D, 1999. html

JAVA class libraries for *"Computational Geometry in C"*, 1998. html

Stabbing Problem. *"Zero-Parity Stabbing Information"* co-authored with J. O'Rourke, Proc. of Japan Conference on Discrete and Computational Geometry, 1998. pdf

Networking *with Lixin Gao, Smith College* **1998**

Influence of commercial contractual agreements on routing policies via *BGP* routing tables.

Investigated the problem of *video-on-demand using multicast.*

Technical skills

Having participated in large scale projects (100K plus lines of code) and supervised medium size projects (20K plus lines of code); proficient in C/C++ cross platform development; working knowledge of C#, Java and OpenGL; familiar with multi-threading, network programming, user interface design (MFC/QT), NMAKE, GNU MAKE, and Perl; experienced in full product development process, including requirements gathering, design, implementation, testing, support and maintenance; specialized in motion planning and real-time control of robotic systems. Major tools used: Visual Studio, WinDbg, gdb, version control systems (MS Source Depot, CVS), Matlab, Mathematica, and LaTex.

Education

Stanford University, Stanford, CA

Ph.D. Candidate passed Physiqual, AI Lab Computer Science Dept., GPA: 3.83, Jan 2003 - Dec 2005

Smith College, Northampton, MA

B.A. in Computer Science and Mathematics, Summa Cum Laude, GPA: 3.97, 2001

Academic Concentration

Robot Motion Planning; Experimental and Advanced Robotics; Geometric Modeling; Algorithms; Operating Systems; Networks; Parallel and Distributed Systems; Assembly Language; Databases; AI; Computational Geometry; Computer Graphics; Combinatorics; Graph Theory; Probability; Numerical Analysis.

Honors and Awards

MIT Graduate Fellowship for Women in Computer Science, 2002.
Microsoft Women's Technical Scholarship, 1999, 2000.
Bert Mendelson Prize for excellence in Computer Science, Smith College, 1998.
Dean's List, First Group Scholar (Top 5% of the class), 1998, 1999, 2000.
Arthur Ellis Hamm Prize for best academic performance in the first year of college, 1998.
Winner of Math, Physics, Biology, and Geography Olympiads, Dubna, Russia.
Winner of competitions in ballroom dancing and swimming, 1988-95.

References

Available upon request.

Miscellaneous

Permanent resident.