

David A. Marshall
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Education

Carnegie-Mellon University , Pittsburgh, PA B.S. Applied Mathematics/Computer Science	1984
Brooklyn College , Brooklyn, NY M.F.A. Painting	1995

Hardware and Software Familiarity

Course Management Systems: Moodle, OWL, Some:Blackboard, WebCT
Programming Languages: Java (incl Swing, JSP, J2EE, JDBC, Lucene, graphics, RMI, networking), Python, PHP5, C#,C++,C, Flash, Lisp, Jess, OPS5,
Technologies: AJAX, Google Web Toolkit, SQL, XML, HTML, Apache, Tomcat, CVS
Software: IntelliJ IDEA, Eclipse, Visio UML, Dreamweaver/Fireworks, MS Office
Databases: MySQL, MS SQLServer, PostgreSQL, Oracle, Sybase
OSs: Windows, Linux, Unix, Mac OSX

Experience

Software Engineer, University of Massachusetts Amherst, Computer Science Dept. 1998 - present
Center for Knowledge Communication

Develop web and desktop applications for delivering educational content. Manage small groups of software developers, including graduate and undergraduate students. Design and implement software, contributing to research papers and proposals. Manage budget and scheduling of projects. Assess hardware/software products, investigating new research directions. Collaborate with researchers and instructors in various disciplines at other institutions to construct online course materials. Negotiate with off-site customers and clients. Overviews and screenshots of projects available at <http://catnip.cs.umass.edu/ckc>

Managed and/or contributed to the following projects:

- *Animal Watch*, a 4th/5th grade math tutor (<http://catnip.cs.umass.edu/animalWatch>)
- *Wise Tutor*, a training system for employees at Cabletron, Inc. This software provides a trainee with a Fujii CP-IV board construction simulator and a tutor which uses common failure scenarios and a diagnostic system to help guide troubleshooting of common problems that arise in its operation. (<http://www2.edc.org/WISE>)
- *UMass OWL*, an e-learning system used across the university by thousands of students. Customized and extended functionality of system (<http://owl.oit.umass.edu>).
- *Wayang Outpost*, a web-based tutoring system for geometry SAT preparation. Architected and implemented (<http://wayang.cs.umass.edu/wayang/WebPage>).

- *Rashi* , an inquiry-based learning environment that tutors college students in various aspects of geology, forestry, and biology (<http://ccbit.cs.umass.edu/rashihome> & <http://catnip.cs.umass.edu/rashi/giorgione-tempest>). Currently working on Rashi2 – a multi-user collaborative inquiry learning environment.
- *Math Forum*, Redesigned user interface of a large online archive of math problems developed by Drexel University, and increased adaptivity toward individual users (<http://mathforum.org/pow/>).
- *DMT*, a general-purpose tutoring engine/authoring environment in AJAX/GWT technology, used to author problems and tutoring content for *Math Forum* and *Wayang Outpost*.

Adjunct Instructor

- Smith College, Computer Science Department Spring 2007
- Deerfield Academy, Computer Science Department Fall/Spring 2007/08

Professional Artist (Painter)

1995 - present

A second career pursued since 1984 (<http://catnip.cs.umass.edu/gallery/>). Currently represented by:

- Oxbow Gallery, Northampton, MA (www.oxbowgallery.com)

Software Consultant, Independent Contractor

1992 - 1998

- United Healthcare Inc., Hartford, CT 1998
- Buxton & Dopp Inc., Chicopee, MA 1996-1997
- Salomon Brothers Inc., New York, NY 1994-1995
- Lehman Brothers Inc., New York, NY 1993-1994
- Dillon Read Company, New York, NY 1992-1993

Senior Software Engineer, Bachman Information Systems Inc., Burlington, MA

1987 - 1991

Developed CASE (computer aided software engineering) products for enhancing, maintaining, and migrating database designs in a start-up company.

- *Bachman Capture for IMS* and *Bachman Capture for COBOL* Sole developer and maintainer.
- *Bachman DBA for IDMS* Maintained and organized multiple releases.
- *Bachman DBA for DB2* Maintained and developed.

Associate Engineer, Martin Marietta Corp., AI Lab - Denver Aerospace, Denver, CO

1984 - 1987

Sole developer of artificial intelligence programming environments:

- *Parallel Prolog*, a Prolog interpreter on a 16 processor BB&N Butterfly machine.
- *HAPS*, an expert system shell, used by many MMC divisions developing expert systems.

Research Programmer, Carnegie-Mellon University, Pittsburgh, PA

1983 - 1984

Worked with C-MU professors (Elaine Kant and Allan Newell) on research project in automatic programming and automatic algorithm design. Designed experiments, wrote software, specified systems.

Publications

- Marshall D., and Raney S. (1986). *A Study of Parallel Programming on the Butterfly*, Martin Marietta Tech Report.
- Raney S., Marshall D.(1986). *An Investigation of Parallelism in Rule-based Systems*, Proceedings of the Army Research Office Workshop on Future Directions in Computer Architecture and Software, Charlestown, SC.
- Arroyo, I., Beal, C. R., Bergman, A., Lindenmuth, M., Marshall, D., Woolf, B. P. (2003). *Intelligent Tutoring for high-stakes achievement tests*, Proceedings of the 11th International Conference on Artificial Intelligence in Education, IOS press.
- Murray, T., Woolf, B., Marshall, D. (2003). *Toward a generic architecture and authoring tools supporting inquiry learning*, Artificial Intelligence and Education, Eds. Ulrich Hoppe, Felisa Verdejo and Judy Kay, IOS press, Netherlands. Conference in Sydney, Australia., 2003, pp 488-490.
- Murray, T., Bruno, M., Woolf, B., Marshall, D., Mattingly, M., Wright, S. & Jellison, M. (2003). *A Coached Learning Environment for Case-Based Inquiry Learning in Human Biology*, Proceedings of E-Learn 2003, Phoenix, Arizona, November 2003.
- Woolf, B. P., Marshall, D., Mattingly, M., Lewis, J., Wright, S., Jellison, M & Murray, T. (2003). *Tracking student propositions in an inquiry system*, In U. Hoppe, F. Berdeho & J. Kay, (Eds.) Artificial Intelligence in Education, Proceedings of AIED 2003, World Conference, IOS Press, pp. 21-28. Winner of best paper prize.
- Murray, T., Woolf, B. & Marshall, D. (2004). *Lessons Learned from Authoring for Inquiry Learning: A tale of three authoring tools*, The International Conference on Intelligent Tutoring Systems, Brazil.
- Sammons, J., Murray, D., Woolf, B., Murray, T., Marshall, D. (2004). *Inquiry-Based Electronic Field Trip Modules*, Annual Meeting of the Geological Society of America. Inspiring First-Rate Research through Undergraduate Teaching: A Special Session in Honor of John B. Reid Jr.
http://gsa.confex.com/gsa/2004AM/finalprogram/session_12811.htm
- Murray, T., Rath, K., Woolf, B., Marshall, D., Bruno, M., Dragon, T. & Kohler, K. (2005). *Evaluating Inquiry Learning through Recognition Based Tasks*, International Conference on AIED, Amsterdam.
- Dragon, T., Woolf, B., Marshall, D., Murray T., (2006) *Coaching Within a Domain-Independent Inquiry-Learning Environment*, The International Conference on Intelligent Tutoring Systems, Taiwan.

References

- Available upon request