

# Richard G. McDaniel

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## Research Interests

User Interface Tools, Programming Environments, Programming-by-Demonstration, Graphical Languages.

## Educational Experience

**Carnegie Mellon University**, Pittsburgh, PA (August 1991 - present)

Ph.D. in Computer Science, 1999

Thesis: Building Whole Applications Using Only Programming-by-Demonstration

advisor: Brad A. Myers

**University of Virginia**, Charlottesville, VA (September 1987 - June 1991)

B.S. in Computer Science with Highest Honors, 1991 (minor in Electrical Engineering)

Cumulative G.P.A. 3.96/4.0

## Work Experience

**Carnegie Mellon University**, Pittsburgh, PA (Fall 1991-Spring 1998)

*Graduate Research*: Designed and implemented environments to support end-user programming using Programming-By-Demonstration. Projects: *Gamut*, uses demonstration to create entire game applications (thesis project); *Marquise*, creates editors for node/arrow diagrams.

**Microsoft Corporation**, Redmond, WA (Summers 1991, 1992, 1993)

*Intern*: Designed and prototyped software related to Microsoft's Object Linking and Embedding architecture (OLE). Year 1: Developed system using OLE 1.0 to automate office related tasks; Year 2: helped design in-place editing model in OLE 2.0; designed and implemented how OLE 2.0 passes window frame information; received patent, A Method and System for In-Place Interaction with Embedded Objects; Year 3: implemented 3-D imager using OLE 2.0.

**University of Virginia**, Charlottesville, VA (June 1988 - June 1991)

*Research Assistant*: Designed and implemented software tools for a Modula-2 operating system. Tools included an extensible debugger which could display novel data types on demand, and an algorithm animation tool which could view running programs with animated graphics and data. Implemented a multi-processor emulator for the Modula-2 system.

## Teaching Experience

**Carnegie Mellon University** (Fall 1992-Spring 1993)

Teaching Assistant for three courses: CS 740, the graduate level computer systems course; CS 15-499(b), a human-computer interaction course; CS 15-462, a computer graphics course

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### Publications

#### Refereed Papers

Richard G. McDaniel, Brad A. Myers. "Getting More Out Of Programming-By-Demonstration," *Proceedings of CHI'99*, To appear.

Richard G. McDaniel, Brad A. Myers. "Building Applications Using Only Demonstration," *IUI'98: 1998 International Conference On Intelligent User Interfaces*, January 1998, San Francisco, CA. pp. 109-116.

Richard McDaniel, Brad A. Myers. "Gamut: Demonstrating Whole Applications." *Proceedings of the ACM Symposium on User Interface Software and Technology (UIST'97)*, October 1997, pp. 81-82.

Brad A. Myers, Rich McDaniel, Rob Miller, Brad Vander Zanden, Dario Giuse, David Kosbie, and Andrew Mickish. "Our Experience with Prototype-Instance Object-Oriented Programming in Amulet and Garnet." *Interfaces*, Issue No. 39 (August 1998), ISSN: 1351-119X. A Publication of the British HCI Group. <http://www.bcs.org.uk/hci>. pp. 4-9.

Brad A. Myers, Rich McDaniel, Rob Miller, Alan Ferreny, Patrick Doane, Andrew Faulring, Ellen Borison, Andy Mickish, and Alex Klimovitski. "The Amulet Environment: New Models for Effective User Interface Software Development." *IEEE Transactions on Software Engineering*, Volume 23, Number 6, June 1997, pp. 347-365.

Brad A. Myers, Robert C. Miller, Rich McDaniel, and Alan Ferreny. "Easily Adding Animations to Interfaces Using Constraints." *Proceedings of the ACM Symposium on User Interface Software and Technology (UIST'96)*, November 1996, pp. 119-128.

Richard McDaniel. "Using Better Communication To Improve Programming-by-Demonstration." *Acquisition Learning & Demonstration: Automating Tasks for Users*, Papers from the 1996 AAI Symposium, Technical Report SS-96-02, pp. 73-77.

Richard McDaniel. "Improving Communication In Programming-by-Demonstration." *Conference on Human Factors in Computing Systems, CHI 96*, Conference Companion, April 13-18, 1996, pp. 55-56.

Brad A. Myers, Francesmary Modugno, Rich McDaniel, David Kosbie, Andrew Werth, Robert C. Miller, John Pane, James Landay, Jade Goldstein, and Matthew A. Goldberg, "The Demonstrational Interfaces Project at CMU." *1996 AAI Spring Symposium on Acquisition, Learning and Demonstration: Automating Tasks for Users*. March 25-27, 1996, Stanford, CA. Technical Report SS-96-02, pp. 85-91. <ftp://a.gp.cs.cmu.edu/afs/cs/project/garnet/www/pbd-group/papers/aaai96workshop.ps>

Brad Myers, Richard McDaniel, and David S. Kosbie. "Marquise: Creating Complete User Interfaces by Demonstration." *Proceeding of INTERCHI'93: Human Factors in Computing Systems*, 1993, pp 293-300.

Brad A. Myers, Rich McDaniel, Andrew Mickish, Alex Klimovitski. "The Design for the Amulet User Interface Toolkit." *Human-Computer Interaction Consortium*, February 1995.

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### Refereed Videotapes

Brad A. Myers, Richard G. McDaniel, Robert C. Miller, Alan Ferrency, Ellen Borison, Andrew Faulring, Andy Mickish, Patrick Doane, and Alex Klimovitski. "The Amulet User Interface Development Environment." 8 minute video. Technical Video Program of the CHI'97 conference. ACM, 0-89791-876-2.

Brad A. Myers, Dario Giuse, Andrew Mickish, Brad Vander Zanden, David Kosbie, Richard McDaniel, James Landay, Matthew Goldberg, and Rajan Pathasarathy. "The Garnet User Interface Development Environment." Technical Video Program of the CHI'94 conference, Boston, MA, April 24-28, 1994.

### Patent

Srinivasa R. Koppolu, Barry B. MacKichan, Richard McDaniel, Rao V. Remala, and Antony S. Williams. *A Method and System for In-Place Interaction with Container Objects*. 1992.

### Unrefereed Publications

Richard G. McDaniel and Brad A. Myers. *Improving Demonstration Using Better Interaction Techniques*. Carnegie Mellon University School of Computer Science Technical Report CMU-CS-97-103 and Human Computer Interaction Institute Technical Report CMU-HCII-97-100, January, 1997.

Brad A. Myers, Alan Ferrency, Rich McDaniel, Robert C. Miller, Patrick Doane, Andy Mickish, Alex Klimovitski. *The Amulet V2.0 Reference Manual*. Carnegie Mellon University School of Computer Science Technical Report, no. CMU-CS-95-166-R1 and Human Computer Interaction Institute Technical Report CMU-HCII-95-102-R1. February 1996.

Rich McDaniel and Brad A. Myers. *Amulet's Dynamic And Flexible Prototype-Instance Object And Constraint System In C++*. Carnegie Mellon University, School of Computer Science Technical Report, no. CMU-CS-95-176 and Human Computer Interaction Institute Technical Report CMU-HCII-95-104. July 1995.

Brad A. Myers, Dario Giuse, Andrew Mickish, Brad Vander Zanden, David Kosbie, James A. Landay, Richard McDaniel, Rajan Parthasarathy, Matthew Goldberg, Roger B. Dannenberg, Philippe Marchal, Ed Pervin. *The Garnet Reference Manuals*. Carnegie Mellon University Computer Science Department Technical Report, no. CMU-CS-90-117-R5, September 1994.

### Awards and Honors

Thesis accepted at CHI'96 Doctoral Consortium, April 1996.  
Recipient of National Science Foundation Graduate Fellowship, 1991-1993  
Member of Tau Beta Pi (Engineering Honor Society), 1990  
Highest Honor Roll, Fall 1987 - May 1991

### Professional Affiliations and Activities

Member of Association for Computing Machinery (ACM)  
Member of Special Interest Group on Computer-Human Interaction (SIGCHI)