Brad A. Myers

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Research Interests:

User Interface Software, Programming Environments, End User Software Engineering, API Usability, Smartphone User Interfaces, Demonstrational Interfaces, User Interface Design, Window Managers, Visual Programming

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Experience:

Human Computer Interaction Institute
Professor, 2004 - present.
Associate Research Professor, 2003 - 2004.
Senior Research Scientist, 1995 - 2003.
Computer Science Department
Senior Research Computer Scientist, 1992 - 1995.
Research Computer Scientist, July 1987- 1992.
School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

Principal investigator for the Natural Programming Project, funded by NSF and industry, which is creating new programming languages, environments and tools that are easier to learn, more effective, and less error prone. We are taking a human-centered approach, first studying how people perform their tasks and then designing languages and environments around people's natural tendencies. We focus on all kinds of programming, including professional programmers, novice programmers who are trying to learn to be experts, and end user programmers, who program to support other jobs or activities.

Principal investigator for the Pebbles PDA project, funded by DARPA, NSF, SEI and industry, which is investigating the use of hand-held computers like Android smartphones, Pocket PC/Windows CE and PalmOS devices synchronously with PCs. By "synchronously," we mean that one or more hand-helds will be connected to a computer or computerized device, so that the hand-helds will be in continuous two-way communication with the main computer and with each other.

Principal investigator for the Silver Project, funded as part of the second Digital Libraries Initiative, which investigated authoring with digital video.

Principal investigator for the User Interface Software Project, funded by DARPA and industry, which developed sophisticated user interface development environments to help build graphical user interfaces. Garnet, our earlier system, is in Lisp, and introduced encapsulating mouse and keyboard behaviors into abstract "interactors." Amulet, the second system, is in C++ and runs on Unix, Windows NT and 95, and Macintosh. Amulet is downloaded about 10,000 times a year, and incorporates novel object, constraint, input, output, undo, command and animation models to provide high-level support for highly-interactive, multi-media applications for one or multiple users. An important focus is high-level graphical editors which allow the user interface designer to draw all graphical aspects of user interfaces, and to demonstrate most of the behavior of the user interface.

Principal investigator for the Demonstrational Interfaces project, funded by NSF and industry. In a "demonstrational interface," the user gives an example of how the system should operate, and the system automatically generalizes from the example to produce a parameterized procedure. For instance, in the Macintosh Finder, the user might move "foo.PS" and then "bar.PS" to the trash can. The system might notice that a similar operation was performed twice and automatically create a procedure to delete all the "*.PS" files. We are developing a demonstrational visual shell (iconic desktop), a text formatter, an editor for business charts, an editor for dynamic world-wide-web pages, and an architecture for programs that support demonstrational interfaces.

MacGnome project (1987-1988): designed a system that creates visualizations for Pascal data structures.

Consultant

1984-present:

1. **Andrews Kurth Kenyon LLP**, New York, NY
2. **Irell & Manella LLP**, Los Angeles, CA
3. **Williams & Connolly LLP**, Washington, DC
4. **Marton Ribera Schumann & Chang LLP**, San Francisco, CA
5. **Tyz Marton Schumann, LLP,** San Francisco, CA
6. **Desmarais LLP**, New York, NY
7. **FACE Group (Fenix Media Ltd.)**, London, UK
8. **O'Melveny & Myers LLP**, Los Angeles, CA
9. **Goldberg, Lowenstein & Weatherwax LLP**, Los Angeles, CA
10. **White & Case LLP**, New York, NY
11. **Rothwell, Figg, Ernst & Manbeck, P.C.,** Washington, DC
12. **Klemchuk Kubasta LLP**, Dallas, TX
13. **Feinberg Day Alberti & Thompson, LLP,** Palo Alto, CA
14. **Finnegan, Henderson, Farabow, Garrett & Dunner, LLP,** Washington, DC
15. **Rubin/Anders Scientific, Inc.,** Brookline, MA
16. **Kellogg, Huber, Hansen, Todd, Evans & Figel, P.L.L.C.,** Washington, DC
17. **Oblon, Spivak, McClelland, Maier & Neustadt, L.L.P.,** Alexandria, VA
18. **McDermott Will & Emery LLP,** Irvine, CA
19. **Mayer Brown LLP,** Palo Alto, CA
20. **IMS ExpertServices,** Pensacola, FL
21. **Sughrue Mion, PLLC,** Washington, DC
22. **Simmons & Simmons,** London, United Kingdom
23. **Latham & Watkins LLP,** Los Angeles, CA
24. **Sidley Austin LLP,** Dallas, TX
25. **Ropes & Gray LLP,** Washington, DC
26. **Adobe Systems Inc.,** San Jose, CA
27. **National Expert Witness Network,** Paradise, CA
28. **McKool Smith,** Austin, TX

31. **Emerson Process Management,** Austin, TX
32. **Clairvoyance Corporation,** Pittsburgh, PA
33. **Wilmer Cutler Pickering Hale and Dorr LLP,** Boston, MA
34. **University of Pittsburgh Dept. of Nursing,** Pittsburgh, PA
35. **Cooley Godward LLP,** Reston, VA
36. **Level 3 Communications,** Broomfield, CO
37. **Cesari and McKenna,** Boston, MA
38. **Fish & Richardson,** Boston, MA, San Diego, CA and Washington, D.C.
39. **Darby & Darby,** New York, NY
40. **Samsung Electronics,** Seoul, Republic of Korea
41. **Morrison & Foerster,** San Diego, CA
42. **Jones, Day, Reavis & Pogue,** Dallas, Texas
43. **Weil, Gotshal & Manges,** Menlo Park, CA
44. **Fenwick & West,** Palo Alto, CA
45. **Kirkland & Ellis,** Los Angeles, CA
46. **Silicon Valley Expert Witness Group Inc.,** Mountain View, CA
47. **Jenkins & Gilchrist,** Dallas, TX
48. **Merchant & Gould,** Minneapolis, MI
49. **GlobalOne,** Reston, VA
50. **Lindquist & Vennum,** Minneapolis, MI
51. **Wilson Sonsini Goodrich & Rosati,** Palo Alto, CA
52. **Klarquist, Sparkman & Campbell,** Portland, OR
53. **Leydig, Voit & Mayer, Ltd,** Chicago, IL
54. **Maya Design Group** Pittsburgh, PA
55. **McDonnell Boehnen Hulbert & Berghoff,** Chicago, IL
56. **Serviceware, Inc.,** Pittsburgh, PA
57. **Secure Computing Corp.,** Roseville, MN
58. **Venable, Baetjer and Howard, LLP,** Baltimore, MD
59. **AT&T General Solicitor Organization,** NJ
60. **Signal Software,** Pittsburgh, PA
61. **Visual Interface,** Pittsburgh, PA
62. **Nixon & Vanderhye P.C.,** Arlington, VA
63. **PROMIS Systems Corp.,** Toronto, Ont, Canada
64. **Emerson Advanced Materials Ctr,** Columbus, OH
65. **Boeing Advanced Tech. Center,** Seattle, WA
66. **Virtual Prototypes, Inc.** Montreal, Canada
67. **Apple Computer, Inc.** Cupertino, CA
68. **Teklicon, Inc.** Mountain View, CA
69. **EJV Partners,** New York, NY
70. **Horizon Research, Inc.** Waltham, MA
71. **Carnegie Group, Inc.** Pittsburgh, PA
72. **Brown and Bain,** Palo Alto, CA
73. **Microsoft,** Redmond, WA
74. **Formative Technologies, Inc.** Pittsburgh, PA
75. **MegaScan,** Gibsonia, PA
76. **Expert Technologies, Inc.,** Pittsburgh, PA
77. **Behavioural Team,** Toronto, Canada
78. **Ashton-Tate, Inc.** Torrance, CA
79. **Eaton Corporation,** Los Angeles, CA
80. **Program Products Ltd,** London, England
81. **Institute for Defense Analyses,** Alexandria, VA
82. **Infodetics,** Anaheim, CA

Advise on user interface design, user interface software, window manager design and implementation. Perform usability analyses and redesign of products.

Intellectual property consulting for software and user interface patents. Reports, depositions and trial testimony on claim construction, infringement, prior art, and validity. A list of my testimony is in a separate document.

PIXterity, (formerly PhotoByte Inc.), San Francisco, CA
Advisor, UI/UX, 2012-present

SachManya LLC, Sunnyvale, CA
Strategic User Interface Advisor, Web and Mobile, 2010-present

Manchester Business School, The University of Manchester, Manchester, UK
Visiting Professor, 2007-2008.

EkaTetra Corporation, (formerly Clarinet Keyboard Corporation), Portland, OR
Technical Member of the Advisory Committee, 2001-present

Helium Networks, Pittsburgh, PA
Member of the Scientific Advisory Board, 2004-2006

SCIconics, Inc., Pittsburgh, PA
Member of the Advisory Board, 2002-2005

Eizel Corporation, Pittsburgh, PA
Member of the Advisory Board, 2001-2003

PERQ Systems Corporation, Pittsburgh, PA
(formerly **Three Rivers Computer Corporation**)
Senior Software Engineer, 1980-1983.
Designed and implemented the Sapphire Window Manager, which was one of the first commercial window systems and featured full covered windows, a novel use of icons and percent-done progress indicators. Designed and implemented the PERQ directory structure for a hierarchical file system including a Scavenger program to correct file system inconsistencies. Also designed and implemented the PERQ's Pascal debugger, a comprehensive user interface package, various graphical editors, demonstration programs, and games.

Xerox Palo Alto Research Center, Palo Alto, CA
Research Intern, Summer 1977, Summer 1978, and Summer/Fall 1979
Developed a system called Incense which automatically created graphical, pictorial displays for data structures based on their types. Implemented Ethernet protocols in Smalltalk.

Education:

University of Toronto, Toronto, Ontario, Canada
1983-1987.
PhD in Computer Science, May, 1987. Was a Teaching Assistant for computer graphics courses. Grade point average for course work = A+.

Massachusetts Institute of Technology, Cambridge, Massachusetts
1975-1980.
Received Master of Science in Computer Science and Bachelor of Science in Computer Science and Engineering in 1980. Did Master's thesis on Incense while an intern at Xerox PARC. Worked at MIT

Awards and Honors:

Most Influential Paper winner for important influences on VL/HCC research or commerce over the last 10+/-1 years by the *IEEE Symposium on Visual Languages and Human-Centric Computing* in 2017, for J. Stylos; B. A. Myers: "Mica: A Web-Search Tool for Finding API Components and Examples" from VL/HCC'2006. (*Only person to win four times*!)

Best Paper Award from the *Sixth International Symposium on End User Development (IS-EUD 2017)* for: "Programming IoT Devices by Demonstration on Mobile Apps", Toby Jia-Jun Li, Yuanchun Li, Fanglin Chen and Brad A. Myers.

ACM SIGCHI Lifetime Achievement Award in Research, 2017, for outstanding fundamental and influential research contributions to the study of human-computer interaction. See SIGCHI citation, video of the talk (1:18:12), slides, advisee tree, abstract and Steven Feiner's introduction.

Best Paper Honorable Mention Award from the *CHI 2017 conference* for: “Variolite: Supporting Exploratory Programming by Data Scientists”, Mary Beth Kery, Amber Horvath, and Brad Myers.

Best Paper Honorable Mention Award from the *CHI 2017 conference* for: “SUGILITE: Creating Multimodal Smartphone Automation by Demonstration”, Toby Li, Amos Azaria, and Brad Myers.

Most Influential Paper Award for important influences on VL/HCC research or commerce over the last 10+/-1 years by the *IEEE Symposium on Visual Languages and Human-Centric Computing* in 2014, for "Estimating the Numbers of End Users and End User Programmers", Christopher Scaffidi, Mary Shaw, and Brad Myers, from *VL/HCC'05*. (*Only person to win three times*!)

Most Influential Paper Award for important influences on VL/HCC research or commerce over the last 10+/-1 years by the *IEEE Symposium on Visual Languages and Human-Centric Computing* in 2013, for "Six Learning Barriers in End-User Programming Systems", Andrew J. Ko, Brad A. Myers, and Htet Htet Aung, from *VL/HCC'04*. (*1st person to win twice*! See list of all winners)

Best Paper Honorable Mention Award from the *CHI 2013 conference* for: “In Search of Learning: Facilitating Data Analysis in Educational Games”, Erik Harpstead, Brad Myers, Vincent Aleven.

IEEE Fellow, 2013, "for development of software tools for human-computer interaction." IEEE 2013 List, and the CMU press release.

Most Influential Paper Award for important influences on VL/HCC research or commerce over the last 10+/-1 years by the *IEEE Symposium on Visual Languages and Human-Centric Computing* in 2012, for "Using HCI techniques to design a more usable programming system", Pane, J.F., Myers, B.A., and Miller, L.B., from *HCC'2002*.

Nominated for Most Influential Paper Award for important influences on VL/HCC research or commerce over the last 10+/-1 years by the *IEEE Symposium on Visual Languages and Human-Centric Computing* in 2012, for "Development and evaluation of a model of programming errors", Ko, A.J. and Myers, B.A., from *HCC 2003*.

Nominated for Most Influential Paper Award for important influences on VL/HCC research or commerce over the last 10+/-1 years by the *IEEE Symposium on Visual Languages and Human-Centric Computing* in 2011, for "Tabular and textual methods for selecting objects from a group", Pane, J.F. and Myers, B.A., from *VL'2000*

Honorable Mention Award in the Best Paper Contest at the International Conference on Intelligent User Interfaces (IUI 2010) for: Andrew Faulring, Brad Myers, Ken Mohnkern, Bradley Schmerl, Aaron Steinfeld,

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