

Richard C. Davis

6307 16th Avenue NE
Seattle, WA 98115-6805
+1 (206) 992-9363
rcdavis@eecs.berkeley.edu
<http://www.eecs.berkeley.edu/~rcdavis>

Research Interests

Human-Computer Interaction, Pen-based User Interfaces, Computer Supported Cooperative Work, Computer Graphics, Animation, End-User Programming, Open-source software

Education

University of California, Berkeley, CA

- PhD in Computer Science, expected August 2008
Dissertation: *K-Sketch: A “Kinetic” Sketch Pad for Novice Animators*
Advisors: James A. Landay and John F. Canny

Massachusetts Institute of Technology, Cambridge, MA

- MEng in Electrical Engineering and Computer Science, June 1995
Thesis: *Functional Testing of ASICs (Application Specific Integrated Circuits) Designed with Hardware Description Languages*
- BS in Computer Science and Engineering with a minor in Theater Arts, June 1995

Research Experience

University of California, Berkeley, CA

Graduate Student Researcher – June 2003 to present & September 1996 to October 1998

- Research with Professor James Landay on NotePals, K-Sketch, SketchWizard, and other projects. Managed group meetings, administered a small laboratory, mentored junior graduate students, and wrote papers, grant proposals, and grant reports.

Microsoft Corporation, Redmond, WA

Research Intern – June 2004 to September 2004

- Designed and implemented “SketchWizard,” which allows designers with no programming experience to create Wizard of Oz prototypes of pen-based applications.

AT&T Labs Research, Florham Park, NJ

Research Intern – June 1998 to August 1998

- Designed and implemented an audio stream downloading and playback plugin for Netscape as part of the “Jotmail” system. The plugin noted playback position while annotations were being typed or drawn and used these annotations to index the audio stream.

FX Palo Alto Laboratory, Palo Alto, CA

Research Intern – June 1997 to August 1997

- Led the design and implementation of “NotePals,” a groupware system that merged handwritten notes and increased awareness of group thoughts and experiences.

Professional Experience

The MathWorks, Inc., Natick, MA

Design Automation UI Engineer – September 2001 to October 2002

- Prototyped new signal viewing interfaces for *Simulink*, a dynamic systems simulation tool. Modified the simulation engine's core to support this new interface. Assisted the Matlab team in porting Simulink to MacOS X.

Artel Software, Inc., Boston, MA

Software Engineer – January 2001 to September 2001

- Added international language support and exporters for AVI and Flash file formats to the *BorisFX* family of products. Worked on cross-platform user interface issues and integration issues with external hosts such as Discreet Edit.

Virtual Ink Corporation, Boston, MA

Business Development Manager – January 2000 to October 2000

- Monitored approximately 200 e-Learning and e-Conferencing companies, developed partnership strategies for 40 companies, and created a new e-commerce sales channel with two companies.
- Wrote proposals for products needed to forge partnerships.

Software Architect – October 1998 to January 2000

- Developed interfaces and graphics algorithms for the *mimio* note-taking software and *mimioMouse* projector calibration software.
- Led interface design and user testing teams for the *mimio*, Handwriting Recognition, and *boardCast* products.
- Led a research team that redesigned the *mimio* software interface to allow editing while preserving meeting capture capabilities.

Intel Corporation, Santa Clara, CA

Component Design Engineer – August 1995 to August 1996

- Performed quality studies of electromigration checking tools and developed new tools that sped up the checking process by improving the user interface.

Teaching Experience

Full Length Courses

CSE 303: Concepts and Tools for Software Development

Lecturer

University of Washington, Seattle, WA – Autumn 2006

- Fully responsible for class lectures, exams, homework assignments, and textbooks
- Managed two teaching assistants and 55 students
- Introduced Subversion version control and upgraded treatment of C++
- Web page: <http://www.cs.washington.edu/education/courses/cse303/06au/>
- Student Rating 3.7/5.0

CSE 490jl: User Interface Design, Prototyping, and Evaluation

Teaching Associate (assisting Professor James Landay)

University of Washington, Seattle, WA – Autumn 2004

- Ran weekly discussion section, purchased and configured course software, graded, guest lectured, mentored project teams
- Web page: <http://www.cs.washington.edu/education/courses/490f/04au/>
- Student Rating 4.9/5.0

CS 184: Computer Graphics

Graduate Student Instructor (assisting Professors David Forsyth and James O'Brien)

University of California, Berkeley, CA – Spring 2003

- Ran weekly discussion section, prepared programming assignments, graded, mentored project teams
- Student Rating 4.3/5.0

Making Art with Computers

Volunteer Instructor

MIT Educational Studies Program, Cambridge, MA – Summer 2002

- Planned and taught extra-curricular course to approximately 50 teenage students
- Topics included 2D and 3D graphics and animation
- Web page: <http://www.cs.berkeley.edu/~rcdavis/teaching/hssp-summer-2002/>

Computer Graphics for Video Games

Volunteer Instructor

MIT Educational Studies Program, Cambridge, MA – Spring 2002

- Planned and taught extra-curricular course to approximately 30 teenage students
- Topics included event-driven programming, linear algebra, 2D & 3D graphics
- Web page: <http://www.cs.berkeley.edu/~rcdavis/teaching/hssp-spring-2002/>

Guest Lectures

IMT 540a: Design Methods for Interaction and Systems

Guest Lecturer – K-Sketch: A “Kinetic” Sketch Pad for Novice Animators

University of Washington, Seattle, WA – October 15, 2008

ENGR 100: Introduction to Engineering Design

Guest Lecturer – The Software Industry: A Personal Whirlwind Tour

University of Washington, Seattle, WA – April 16, 2004

CS 160: User Interface Design, Prototyping, and Evaluation

Guest Lecturer – Usability in the Trenches

University of California, Berkeley, CA – October 29, 2003 & November 4, 2002

Other Experience

Math Tutor

Prison University Project, San Quentin, CA – September 2003 to December 2003

Computer Tutor

New England Shelter for Homeless Veterans, Boston, MA – January 1999 to June 1999

Honors

- Graduate Assistance in Areas of National Need (GAANN) Fellowship, 1996-1997
- Honorable Mention for National Science Foundation Graduate Fellowship, 1995

Publications

Refereed Journal Publications

James A. Landay and Richard C. Davis. Making sharing pervasive: Ubiquitous computing for shared note taking. *IBM Systems Journal*, vol. 38, no. 4, 1999, pp. 531-550.

Refereed Conference and Symposium Publications

Richard C. Davis, Brien Colwell, and James A. Landay. K-Sketch: A “Kinetic” Sketch Pad for Novice Animators. *Proceedings of CHI 2008*, Florence, Italy, April 5-10, 2008, pp. 413-422. [22% acceptance rate]

Richard C. Davis, T. Scott Saponas, Michael Shilman, and James A. Landay. SketchWizard: Wizard of Oz Prototyping of Pen-based User Interfaces. *Proceedings of UIST 2007*, Newport, RI, October 7-10, 2007, pp. 119-128. [17 % acceptance rate]

Richard C. Davis and James A. Landay. Informal Animation Sketching: Requirements and Design. *Proceedings of AAAI 2004 Fall Symposium on Making Pen-Based Interaction Intelligent and Natural*. Arlington, VA, October, 2004, pp. 42-48. [69% acceptance rate]

Daniel L. Odell, Richard C. Davis, Andrew Smith, and Paul K. Wright. Toolglasses, Marking Menus, and Hotkeys: A Comparison of One and Two-Handed Command Selection Techniques. *Proceedings of Graphics Interface 2004*, London, Ontario, Canada, May, 2004, pp. 17-24. [38% acceptance rate]

Steve Whittaker, Richard Davis, Julia Hirschberg, Urs Muller. Jotmail: A Voicemail Interface that Enables You to See What Was Said. *Proceedings of CHI 2000*, The Hague, Netherlands, April 2000, pp. 89-96. [19% acceptance rate]

Richard C. Davis, James A. Landay, Victor Chen, Jonathan Huang, Rebecca B. Lee, Francis Li, James Lin, Charles B. Morrey III, Ben Schleimer, Morgan N. Price, and Bill N. Schilit. NotePals: Lightweight Note Sharing by the Group, for the Group. *Proceedings of CHI '99*, Pittsburgh, PA, May 1999, pp. 338-345. [25% acceptance rate]

Refereed Demonstrations

Richard C. Davis and James A. Landay. Sketching Informal Animations with K-Sketch. *The Fourth Eurographics Workshop on Sketch-Based Interfaces and Modeling*. Riverside, CA, August 2007.

Richard C. Davis, James Lin, Jason A. Brotherton, James A. Landay, Morgan N. Price and Bill N. Schilit. A Framework for Sharing Handwritten Notes. *Proceedings of UIST '98*, San Francisco, CA, November 1998, pp. 119-120.

Refereed Workshop Position Papers

James A. Landay, Yang Li, and Richard Davis. Activity-based Pen Computing. *2007 Invited Workshop on Pen-Centric Computing Research*, Brown University, March, 2007.

Richard C. Davis. Informal Animation Sketching with K-Sketch. *Doctoral Consortium, UIST 2005*, Seattle, WA, October, 2005.

Richard C. Davis and James A. Landay. Forms of Expression for Designing Visual Languages for Animation. *Graduate Student Consortium, IEEE Symposium on Visual Languages and Human-Centric Computing*, Dallas, Texas, September 2005, pp. 327-328.

Richard C. Davis and James A. Landay. A Visual Language for Animating Sketches. *Graduate Student Consortium, IEEE Symposium on Visual Languages and Human-Centric Computing*, Rome, Italy, September 2004, pp. 273-274.

James A. Landay, Richard C. Davis, Victor Chen, Jonathan Huang, Rebecca B. Lee, Francis Li, James Lin, Charles B. Morrey III, and Ben Schleimer. NotePals: Sharing and Synchronizing Handwritten Notes with Multimedia Documents. *Handheld CSCW Workshop, CSCW '98*, Seattle, WA, Nov. 1998.

Unrefereed Publications

Richard C. Davis and James A. Landay. An Exploration of Lightweight Meeting Capture. Technical Report UCB//CSD-98-1015, CS Division, EECS Department, UC Berkeley, Berkeley, CA, May 1998.

Richard C. Davis, Jason A. Brotherton, James A. Landay, Morgan N. Price, and Bill N. Schilit. NotePals: Lightweight Note Taking by the Group, for the Group. Technical Report UCB//CSD-98-997, CS Division, EECS Department, UC Berkeley, Berkeley, CA. February 1998.

Jason A. Brotherton, Richard C. Davis, James A. Landay, Morgan N. Price, and Bill N. Schilit. Sharing Free-form Ink through the Web. Technical Report FXPAL-TR-97-022, FX Palo Alto Laboratory, September 1997.

Richard C. Davis. *Functional Testing of ASICs Designed with Hardware Description Languages*. Master's Thesis. Massachusetts Institute of Technology, Electrical Engineering and Computer Science Department. May 1995.

George A. Boughton, Greg Papadopoulos, Bob Greiner, Satoshi Asari, Steve Chamberlin, Jack Costanza, Richard Davis, Thomas Deng, Tom Durgavich, Doug Faust, Eric Heit, Tom Klemas, Jimmy Kwon, Wing Chi Leung, Elizabeth Ogston, Gowri Rao, and Ralph Tiberio. Arctic User's Manual. CSG Memo 353, Computation Structures Group, MIT Laboratory for Computer Science, MIT, Cambridge, MA, February. 1994.

Patents

Yonald Chery, Richard C. Davis, Andrew Kelley, III, William P. Moyne, Matthew D. Verminski. *Detector Assembly for Use in a Transcription System*. United States Patent 6,232,962, Assigned to Virtual Ink Corporation, June 7, 2000.

Research Grants Authored

National Science Foundation, 2007. SGER: End-user Sketching of Games and Simulations (P.I. James Landay), \$142,281.

Talks

Conference and Workshop Presentations

SketchWizard: Wizard of Oz Prototyping of Pen-Based User Interfaces. UIST 2007, Newport, RI, October 2007.

Informal Animation Sketching with K-Sketch: The Kinetic Sketch Pad. UIST 2005 Doctoral Consortium, Seattle, WA October 2005.

Choosing Animation Features in K-Sketch. VL/HCC 2005 Graduate Student Consortium, Dallas, TX, September 2005.

A Visual Language for Animating Sketches. VL/HCC 2004 Graduate Student Consortium, Rome, Italy, September 2004.

Informal Animation Sketching: Requirements and Design. AAAI Fall Symposium on Making Pen-Based Interaction Intelligent and Natural, Alexandria, VA, October 2004.

Invited Talks

K-Sketch: A “Kinetic” Sketch Pad for Novice Animators. Adaptive Systems and Interaction Group, Microsoft Research, Redmond, WA, September 25th, 2008.

K-Sketch: A “Kinetic” Sketch Pad for Novice Animators. School of Interactive Computing, Georgia Institute of Technology, Atlanta, GA November 2007.

Icon Handles: Work In Progress. DUB Seminar, University of Washington, Seattle, WA, December 2005.

Informal Animation Sketching. Educational Psychology Seminar, University of Washington, Seattle, WA, May 2004.

Media Coverage

Celeste Bieber. Easy animation to get novices jumping for joy. *New Scientist*, issue 2524, November 5, 2005, p 26.

Professional Affiliations and Activities

Conference Committees

- UIST: ACM Symposium on User Interface Software & Technology: *Student Volunteer Chair (1998)*

Conference Staff

- Microsoft Research/Brown Univ./DTO 2007 Invited Workshop on Pen Computing: *Scribe*
- Univ. of Washington and Microsoft Research 2005 Faculty Tablet PC Workshop: *Scribe*

Referee/Reviewer

- CHI: ACM Conference on Human Factors in Computing Systems (2005,2007,2008,2009)
- CSCW: ACM Conference on Computer Supported Cooperative Work (2004)

- Graphics Interface (2005, 2008)
- IUI: International Conference on Intelligent User Interfaces (2008)
- SIGGRAPH (2007, 2008)
- UIST: ACM Symposium on User Interface Software and Technology (1998,2004–2008)

Campus and Academic Service

- **UC Berkeley Group for User Interface Research:** *Weekly Meeting Coordinator (1997-1998)*
- **UC Berkeley Computer Science Graduate Student Association:** *Social chair (1997-1998)*
- **UC Berkeley Soda Hall (CS Division) Safety Committee:** *Member (1997-1998)*

Student Advising

- | | | | | |
|--------------------------|-----------|---------------------|---------------|--------------------------|
| • Brien Colwell | Undergrad | <i>K-Sketch</i> | U. Washington | Fall 2007 to present |
| • Matthew Davis | Undergrad | <i>K-Sketch</i> | U. Washington | Fall 2005 to Spring 2007 |
| • Cy Khormae | Undergrad | <i>K-Sketch</i> | U. Washington | Fall 2005 to Spring 2006 |
| • Scott Saponas | Graduate | <i>SketchWizard</i> | U. Washington | Spring 2006 to present |
| • Arpi Shaverdian | Undergrad | <i>K-Sketch</i> | U. Washington | Winter 2005 to Fall 2005 |
| • Jonathan Huang | Undergrad | <i>NotePals</i> | U.C. Berkeley | Fall 1997 to Summer 1998 |
| • Victor Chen | Undergrad | <i>NotePals</i> | U.C. Berkeley | Fall 1997 to Summer 1998 |

Other Activities

Theater Interest

- Acted in fifteen stage plays and two short films (1989 to present)
- Stage managed two stage plays and produced one stage play
- Served as vice president of the MIT Dramashop in 1993-1994
- Received MIT's Ed Darna Award for contribution to Theater Arts in 1995

Music Interest

- Member of numerous choirs (1985 to present)
- Performed in five musical theater productions

Social Action Interest

- Volunteer projects, including computer help for the homeless and disadvantaged, math tutoring for prisoners, and cooking in a soup kitchen (1994 to present)

Citizenship

United States Citizen