

Jeffrey Michael Heer

University of California, Berkeley
360 Hearst Memorial Mining Building
Berkeley, CA 94720-1776

+1 415 430 5984
jheer@cs.berkeley.edu
jheer.org | vis.berkeley.edu

RESEARCH INTERESTS

Human-Computer Interaction, Information Visualization, Social Computing, User Interface Tools, Ubiquitous Computing, New Media

EDUCATION

- (expected) May 2008 **University of California, Berkeley, CA**
Ph.D. in Computer Science
Dissertation: *Supporting Asynchronous Collaboration for Information Visualization*
Committee: Maneesh Agrawala (*Advisor*), Marti Hearst, Joseph Hellerstein, Stuart K. Card
- Dec 2004 **University of California, Berkeley, CA**
M.S. in Computer Science
Advisors: James A. Landay, Marti Hearst
- May 2001 **University of California, Berkeley, CA**
B.S. with highest honors in Electrical Engineering and Computer Science
Honors Program breadth area in Cognitive Science
Advisors: Christos H. Papadimitriou, James A. Landay

EMPLOYMENT

- Aug 2002 - Present **University of California, EECS Dept, Berkeley, CA**
Graduate Student Researcher & Instructor
- Jan - Apr 2007 **Microsoft Research, Redmond, WA**
Research Intern
- Jun - Sep 2006 **IBM T.J. Watson Research Center, Cambridge, MA**
Research Intern
- Jun - Sep 2005 **Tableau Software, Seattle, WA**
User Interface Development Intern
- Sep 2002 - May 2005 **Palo Alto Research Center, Inc., Palo Alto, CA**
Research Consultant
- Jun 2001 - Sep 2002 **Xerox Palo Alto Research Center, Palo Alto, CA**
Member of Research Staff
- Jan - May 2001 **University of California, Psychology Dept, Berkeley, CA**
Undergraduate Researcher
- Aug 2000 - May 2001 **University of California, EECS Dept, Berkeley, CA**
Undergraduate Researcher
- May - Aug 2000 **Xerox Palo Alto Research Center, Palo Alto, CA**
Undergraduate Research Intern

TEACHING

- Spring 2006 **Visualization** (CS294-10, Computer Science)
Co-Instructor with Prof. Maneesh Agrawala
- Fall 2005 **Information Visualization** (IS247, School of Information)
Co-Instructor with Prof. Marti Hearst, Instructor Rating 6.4/7
- Spring 2005 **Foundations of New Media** (IS146, School of Information)
Graduate Student Instructor with Prof. Marc Davis, Prof. Peter Lyman, and danah boyd

REFEREED PUBLICATIONS

- Conference Papers **Generalized Selection via Interactive Query Relaxation**, Jeffrey Heer, Maneesh Agrawala, Wesley Willett. To appear in *Proc. ACM Human Factors in Computing Systems (CHI)*, Apr 2008. [22% Acceptance Rate]
- Design Considerations for Collaborative Visual Analytics**, Jeffrey Heer, Maneesh Agrawala. *Proc. IEEE Symposium on Visual Analytics Science and Technology (VAST)*, pp. 171-178, Nov 2007. [42% Acceptance Rate] [Invited to a special edition of Information Visualization Journal]
- Animated Transitions in Statistical Data Graphics**, Jeffrey Heer, George G. Robertson. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'07)*, 13(6), pp. 1240-1247, Nov/Dec 2007. [23% Acceptance Rate]
- Scented Widgets: Improving Navigation Cues with Embedded Visualizations**, Wesley Willett, Jeffrey Heer, Maneesh Agrawala. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'07)*, 13(6), pp. 1129-1136, Nov/Dec 2007. [23% Acceptance Rate]
- Voyagers and Voyeurs: Supporting Asynchronous Collaborative Information Visualization**, Jeffrey Heer, Fernanda Viégas, Martin Wattenberg. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 1029-1038, Apr 2007. [24% Acceptance Rate]
- Momento: Support for Situated Ubicomp Experimentation**, Scott Carter, Jennifer Mankoff, Jeffrey Heer. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 125-134, Apr 2007. [24% Acceptance Rate]
- Software Design Patterns for Information Visualization**, Jeffrey Heer, Maneesh Agrawala. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'06)*, 12(5), pp. 853-860, Sep/Oct 2006. [24% Acceptance Rate]
- Multi-Scale Banking to 45 Degrees**, Jeffrey Heer, Maneesh Agrawala. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'06)*, 12(5), pp. 701-708, Sep/Oct 2006. [24% Acceptance Rate]
- TimeTree: Exploring Time Changing Hierarchies**, Stuart K. Card, Bongwon Suh, Bryan Pendleton, Jeffrey Heer, John W. Bodnar. *Proc. IEEE Symposium on Visual Analytics Science and Technology (VAST)*, pp. 3-10, Oct 2006. [43% Acceptance Rate]
- Profiles as Conversation: Networked Identity Performance on Friendster**, danah boyd, Jeffrey Heer. *Proc. HICSS-39, Hawaii Int'l Conf. on System Sciences, Persistent Conversation Track*, Jan 2006. [48% Acceptance Rate]
- Vizster: Visualizing Online Social Networks**, Jeffrey Heer, danah boyd. *Proc. IEEE Symposium on Information Visualization (InfoVis)*, pp. 32-39, Oct 2005. [27% Acceptance Rate]

Prefuse: A Toolkit for Interactive Information Visualization, Jeffrey Heer, Stuart K. Card, James A. Landay. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 421-430, Apr 2005. [25% Acceptance Rate]

DOITrees Revisited: Scalable, Space-Constrained Visualization of Hierarchical Data, Jeffrey Heer, Stuart K. Card. *Proc. Advanced Visual Interfaces (AVI)*, pp. 421-424, May 2004. [26% Acceptance Rate]

Presiding Over Accidents: System Direction of Human Action, Jeffrey Heer, Nathaniel Good, Ana Ramirez, Marc Davis, and Jennifer Mankoff. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 463-470, 2004. [16% Acceptance Rate]

liquid: Context-Aware Distributed Queries, Jeffrey Heer, Alan Newberger, Christopher Beckmann, Jason I. Hong. *Proc. UbiComp 2003, 5th Annual Conference on Ubiquitous Computing*, pp. 140-148, Oct 2003. [14% Acceptance Rate]

LumberJack: Intelligent Discovery and Analysis of Web Traffic Composition, Ed H. Chi, Adam Rosien, Jeffrey Heer. *Proc. WEBKDD 2002: Web Mining for Usage Patterns and User Profiles*, pp. 1-16, Jul 2002. [40% Acceptance Rate]

What Did They Do? Understanding Clickstreams with the WebQuilt Visualization System, Sarah Waterson, Jason I. Hong, Tim Sohn, Jeffrey Heer, Tara Matthews, James A. Landay. *Proc. Advanced Visual Interfaces (AVI)*, pp. 94-102, 2002. [30% Acceptance Rate]

Separating the Swarm: Categorization Methods for User Access Sessions on the Web, Jeffrey Heer, Ed H. Chi. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 243-250, Apr 2002. [15% Acceptance Rate]

Journal Articles **Does Binding of Synesthetic Color to the Evoking Grapheme Require Attention?** Noam Sagiv, Jeffrey Heer, Lynn Robertson. *Cortex*, 42(2), pp. 232-242, 2006.

WebQuilt: A Proxy-based Approach to Remote Web Usability Testing, Jason I. Hong, Jeffrey Heer, Sarah Waterson, James A. Landay. *ACM Transactions on Information Systems*, 19(3), pp. 263-285, 2001.

Book Chapters **Point, Talk, Publish: Visualization and the Web**, Jeffrey Heer, Fernanda B. Viégas, Martin Wattenberg, Maneesh Agrawala. To appear in E. Zudilova-Seinstra, T. Adriaansen, R. van Liere (eds), *Trends in Interactive Visualisation*, Springer, 2008.

Creation and Collaboration: Engaging New Audiences for Information Visualization, Jeffrey Heer, Frank van Ham, Sheelagh Carpendale, Chris Weaver, Petra Isenberg. To appear in J. Fekete, A. Kerren, C. North, J. T. Stasko (eds), *Information Visualization: Human-Centered Issues in Visual Representation, Interaction, and Evaluation*, Springer, 2008.

Short Papers **Wideband Displays: Mitigating Multiple Monitor Seams**, Jock Mackinlay, Jeffrey Heer. *Extended Abstracts, ACM Human Factors in Computing Systems (CHI)*, pp. 1521-1524, 2004.

All Together Now: Visualizing Local and Remote Actors of Localized Activity, Scott Lederer, Jeffrey Heer. *Extended Abstracts, ACM Human Factors in Computing Systems (CHI)*, pp. 1107-1110, 2004.

Efficient User Interest Estimation in Fisheye Views, Jeffrey Heer, Stuart K. Card. *Extended Abstracts, ACM Human Factors in Computing systems (CHI)*, pp. 836-837, 2003.

- Workshop Papers **Evaluating Visualizations to Unearth Behavior and Insight**, Jeffrey Heer. *Beyond Time and Errors: Novel Evaluation Methods for Information Visualization Workshop, ACM CHI*, 2008.
- Socializing Visualization**, Jeffrey Heer. *Social Visualization Workshop, ACM CHI*, 2006.
- Seeing the Invisible**, Jeffrey Heer, Peter Khooshabeh. *Workshop on Invisible & Transparent Interfaces, Advanced Visual Interfaces (AVI)*, 2004.
- Capturing and Analyzing the Web Experience**, Jeffrey Heer. *Workshop on Automatic Capture, Representation, and Analysis of User Activity, ACM CHI*, 2002.
- Mining the Structure of User Activity using Cluster Stability**, Jeffrey Heer, Ed H. Chi. *Web Analytics Workshop, SLAM Conference on Data Mining*, 2002.
- Identification of Web User Traffic Composition using Multi-Modal Clustering and Information Scent**, Jeffrey Heer, Ed H. Chi. *Workshop on Web Mining, SLAM Conference on Data Mining*, pp. 51-58. Chicago, IL, 2001.
- Demos **Prefuse: A Toolkit for Interactive Information Visualization**, Jeffrey Heer, Stuart K. Card, James A. Landay. *User Interface Software and Technology (UIST)*, 2004.
- Active Capture: Automatic Direction for Automatic Movies**, Marc Davis, Jeffrey Heer, Ana Ramirez. *ACM Multimedia*, 2003.

UNREFEREED PUBLICATIONS

- Dangerous Liaisons**, Jeffrey Heer. *Ambidextrous Magazine*. Issue Four, Summer 2006.
- Bits, Bäume, und Bilder**, Jeffrey Heer. *einfach komplex - Bildbäume und Baumbilder in der Wissenschaft*. Museum für Gestaltung, Zürich, 2005.

PATENTS

- Doubly Linked Visual Discussions for Data Visualization**. Jeffrey Heer, Jesse Kriss, Frank van Ham, Fernanda B. Viégas, Martin Wattenberg. (Patent Pending).
- Systems and Methods for the Estimation of User Interest in Graph Theoretic Structures**. Jeffrey Heer, Stuart K. Card. US Patent 7,215,337. Filed 18 Dec 2003. Issued 8 May 2007.
- Systems and Methods for Clustering User Sessions using Multi-modal Information including Proximal Cue Information**. Jeffrey Heer, Ed H. Chi. US Patent 7,043,475. Filed 19 Dec 2002. Issued 9 May 2006.

EXHIBITIONS

- Apr - Sep 2005 **einfach komplex - Bildbäume und Baumbilder in der Wissenschaft**
Museum für Gestaltung, Zürich, Switzerland
 Curators: Andres Janser, Marius Kwint, Barbara Bader
 Exhibited images of the Degree-of-Interest Tree browser and other visualizations.
- 26 Mar 2005 **False Profit: LIQUIDATE**
False Profit, San Francisco, CA
 Interactive installation of the Vizster social network browser.

INVITED TALKS

- 16 Nov 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
CSAIL HCI Seminar, Massachusetts Institute of Technology (MIT). *Cambridge, MA*
- 15 Nov 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
School of Engineering and Applied Science, Harvard University. *Cambridge, MA*
- 14 Nov 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
HCI Institute, Carnegie Mellon University. *Pittsburgh, PA*
- 26 Sep 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
PowerSet, Inc. *San Francisco, CA*
- 29 Jun 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
Yahoo! Research Berkeley. *Berkeley, CA*
- 23 Jun 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
O'Reilly FOO Camp. *Sebastopol, CA*
- 19 Jun 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
Google, Inc. *Mountain View, CA*
- 28 May 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
Human-Centered Issues in Information Visualization, Schloß Dagstuhl. *Saarland, Germany*
- 12 Apr 2007 **Voyagers and Voyeurs: Supporting Collaborative Information Visualization**
DUB Seminar, University of Washington. *Seattle, WA*
- 6 Mar 2006 **Visualization**
CME340: Computational Methods in Data Mining. Stanford University. *Stanford, CA*
- 14 Feb 2006 **Vizster: Visualizing Online Social Networks**
BayCHI: The San Francisco Bay Area Chapter of ACM SIGCHI. *Palo Alto, CA*
- 14 Oct 2005 **Presiding Over Accidents: Techniques for Designing Directive Systems**
Seminar on People, Computers, and Design, Stanford University. *Stanford, CA*
- 2 Jun 2005 **Exploring Enron: A Sketch of Visual Data Mining of E-Mail Archives**
Email Archive Visualization Workshop, HCIL University of Maryland. *College Park, MD*
- 5 May 2005 **190 Lines of Code**
050505: Zoning and Grinding. Center for New Media, University of California. *Berkeley, CA*
- 25 Apr 2005 **Information Visualization**
CME340: Computational Methods in Data Mining. Stanford University. *Stanford, CA*
- 9 Oct 2004 **Prefuse: A Toolkit for Interactive Information Visualization**
InfoVis 2004 Workshop on Information Visualization Software Architectures. *Austin, TX*
- 8 Feb 2000 **Undergraduate HCI Projects at UC Berkeley**
BayCHI: The San Francisco Bay Area Chapter of ACM SIGCHI. *Palo Alto, CA*

MEDIA

- 3 Mar 2006 **Numb3rs**. Season 2, Episode 16: “Protest”. CBS Television.
- 30 Jan 2006 **Science Puts Enron E-Mail to Use**. Wired News.
- 16 Jun 2005 **500.000 E-Mails erzählen Geschichte der Enron-Pleite**. Der Spiegel.
- 13 Jun 2005 **Exploring Enron**. Metafilter.com
- 7 Jun 2005 **Social network analyzer for Enron's emails**. BoingBoing.net

PROFESSIONAL ACTIVITIES

- Program Committee IEEE Information Visualization (*InfoVis*) 2007-2008
Int'l Conf on Coordinated & Multiple View Visualization (*CMV*) 2007
- Publications Chair IEEE Information Visualization (*InfoVis*) 2008
- Workshop Organizer CHI 2008 Social Data Analysis Workshop *with F. B. Viégas, M. Wattenberg, & M. Agrawala*
Berkeley Visualization Workshop, 12 May 2006 *with M. Agrawala*
- Reviewer ACM Human Factors in Computing Systems (*CHI*) 2004-2008
ACM User Interface Software and Technology (*UIST*) 2007
IEEE Information Visualization (*InfoVis*) 2005-2007
IEEE Visualization (*Vis*) 2006
IEEE Visual Analytics Science and Technology (*VAST*) 2006-2007
IEEE Computer Graphics and Applications 2004
IEEE Pacific Visualization Symposium 2008
Graphics Interface (*GI*) 2006
Conference of the European Association for Computer Graphics (*Eurographics*) 2006
Advanced Visual Interfaces (*AVI*) 2004
International Conference on Ubiquitous Computing (*UbiComp*) 2003
Journal of Computer-Mediated Communication (*JCMC*) 2007
Journal of Electronic Commerce Research (*JECR*) 2008
- Berkeley Committees Graduate Admissions, Computer Science Division, 2004, 2006, 2008
- Member Association for Computing Machinery (*ACM*)
Institute of Electrical and Electronics Engineers (*IEEE*)

AWARDS AND FELLOWSHIPS

- 2006 Microsoft Graduate Fellowship
IBM Ph.D. Fellowship
- 2004 Outstanding Performance Award, A3I NIMD Team, PARC, Inc.
- 2002 National Defense Science and Engineering Graduate Fellowship
National Science Foundation Graduate Fellowship (*declined*)
Hertz Foundation Graduate Fellowship Finalist
- 2001 Warren Y. Dere Engineering Design Award, EECS Dept, UC Berkeley
Honors Degree Program, EECS Dept, UC Berkeley

REFERENCES

Maneesh Agrawala

Assistant Professor, *Computer Science, University of California at Berkeley*

Stuart K. Card

Senior Research Fellow, *Palo Alto Research Center Inc.*

Marti Hearst

Associate Professor, *School of Information, University of California at Berkeley*

Jock D. Mackinlay

Director of Visual Analysis, *Tableau Software Inc.*

George G. Robertson

Senior Researcher, *Microsoft Research*

Martin Wattenberg

Manager, Visual Communication Lab, *IBM T.J. Watson Research Center*