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EDUCATION

Dec 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

PROFESSIONAL EXPERIENCE

Jan 2009 - Present **Stanford University, Computer Science Dept**, Stanford, CA
Assistant Professor

Aug 2002 – Dec 2008 **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 EXPERIENCE

Spring 2011 **Research Topics in Interactive Data Analysis** (CS448g, Stanford Computer Science)
Instructor (Rating 4.57/5, Area mean 4.22/5)

Winter 2011 **Human-Computer Interaction Design Studio** (CS247, Stanford Computer Science)
Instructor (Rating 4.13/5, Area mean 4.16/5)

Fall 2010 **Data Visualization** (CS448b, Stanford Computer Science)
Instructor (Rating 4.67/5, Area mean 4.18/5)

Winter 2010 **Social Software** (CS294h, Stanford Computer Science)
Instructor (Rating 4.42/5, Area mean 4.16/5)

Fall 2009 **Data Visualization** (CS448b, Stanford Computer Science)
Instructor (Rating 4.68/5, Area mean 4.22/5)

Spring 2009 **Research Topics in Human Computer Interaction** (CS376, Stanford Computer Science)
Instructor (Rating 4.69/5, Area mean 4.19/5)

Winter 2009 **Data Visualization** (CS448b, Stanford Computer Science)
Instructor (Rating 4.71/5, Area mean 4.15/5)

Spring 2006 **Visualization** (CS294-10, UCB Computer Science)
Co-Instructor with Prof. Maneesh Agrawala

Fall 2005 **Information Visualization** (IS247, UCB School of Information)
Co-Instructor with Prof. Marti Hearst (Rating 6.4/7)

Spring 2005 **Foundations of New Media** (IS146, UCB School of Information)
Graduate Student Instructor with Prof. Marc Davis, Prof. Peter Lyman, and danah boyd

REFEREED PUBLICATIONS

Conference Papers

D3: Data-Driven Documents. Michael Bostock, Vadim Ogievetsky, Jeffrey Heer. *To appear in IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'10)*, Oct 2011. [26% Acceptance Rate]

Divided Edge Bundling for Directional Network Data. David Selassie, Brandon Heller, Jeffrey Heer. *To appear in IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'10)*, Oct 2011. [26% Acceptance Rate]

Orion: A System for Modeling, Transformation and Visualization of Multidimensional Heterogeneous Networks. Jeffrey Heer, Adam Perer. *To appear in IEEE Visual Analytics Science & Technology (VAST)*, Oct 2011. [32% Acceptance Rate]

ReVision: Automated Classification, Analysis and Redesign of Chart Images. Manolis Savva, Nicholas Kong, Arti Chhajta, Li Fei-Fei, Maneesh Agrawala, Jeffrey Heer. *To appear in ACM User Interface Software & Technology (UIST)*, Oct 2011. [25% Acceptance Rate]

Proactive Wrangling: Mixed-Initiative End-User Programming of Data Transformation Scripts. Philip J. Guo, Sean Kandel, Joseph Hellerstein, Jeffrey Heer. *To appear in ACM User Interface Software & Technology (UIST)*, Oct 2011. [25% Acceptance Rate]

Peripheral Paced Respiration: Influencing User Physiology during Information Work. Neema Moraveji, Ben Olson, Truc Nguyen, Mahmoud Saadat, Yaser Khalighi, Roy Pea, Jeffrey Heer. *To appear in ACM User Interface Software & Technology (UIST)*, Oct 2011. [25% Acceptance Rate]

MUSE: Reviving Memories Using Email Archives. Sudheendra Hangal, Monica S. Lam, Jeffrey Heer. *To appear in ACM User Interface Software & Technology (UIST)*, Oct 2011. [25% Acceptance Rate]

Visualizing Collaboration and Influence in the Open-Source Software Community. Brandon Heller, Eli Marschner, Evan Rosenfeld and Jeffrey Heer. *Proc. Mining Software Repositories (MSR)*, pp. 223-226, May 2011. [35% Acceptance Rate]

Wrangler: Interactive Visual Specification of Data Transformation Scripts. Sean Kandel, Andreas Paepcke, Joseph Hellerstein and Jeffrey Heer. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 3363-3372, May 2011. [26% Acceptance Rate]

CommentSpace: Structured Support for Collaborative Visual Analytics. Wesley Willett, Jeffrey Heer, Joseph Hellerstein and Maneesh Agrawala. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 3131-3140, May 2011. [26% Acceptance Rate, **Best Paper Nominee**]

Groups Without Tears: Mining Social Topologies from Email. Diana MacLean, Sudheendra Hangal, Seng Keat Teh, Monica Lam and Jeffrey Heer. *Proc. ACM Intelligent User Interfaces (IUI)*, pp. 83-92, Feb 2011.

Declarative Language Design for Interactive Visualization, Jeffrey Heer and Michael Bostock. IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'10), 16(6), pp. 1149-1156, Oct 2010. [26% Acceptance Rate, **Best Paper Honorable Mention**]

Narrative Visualization: Telling Stories with Data. Edward Segel and Jeffrey Heer. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'10)*, 16(6), pp. 1139-1148, Oct 2010. [26% Acceptance Rate]

Perceptual Guidelines for Creating Rectangular Treemaps. Nicholas Kong, Jeffrey Heer and Maneesh Agrawala. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'10)*, 16(6), pp. 990-998, Oct 2010. [26% Acceptance Rate, **Best Paper Honorable Mention**]

Tracing Genealogical Data with TimeNets. Nam Wook Kim, Stuart K. Card, Jeffrey Heer. *Proc. Advanced Visual Interfaces*, pp. 241-248, May 2010. [20% Acceptance Rate]

Crowdsourcing Graphical Perception: Using Mechanical Turk to Assess Visualization Design. Jeffrey Heer, Michael Bostock. *Proc. ACM Human Factors in Computing Systems*, pp. 203-212, Apr 2010. [22.0% Acceptance Rate, **Best Paper Nominee**]

Protovis: A Graphical Toolkit for Visualization. Michael Bostock, Jeffrey Heer. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'09)*, 15(6), pp. 1121-1128, Nov/Dec 2009. [26% Acceptance Rate]

Sizing the Horizon: The Effects of Chart Size and Layering on the Graphical Perception of Time Series Visualizations. Jeffrey Heer, Nicholas Kong, Maneesh Agrawala. *Proc. ACM Human Factors in Computing Systems*, pp. 1303-1312, Apr 2009. [24.5% Acceptance Rate, **Best Paper Award**]

Graphical Histories for Visualization: Supporting Analysis, Communication, and Evaluation. Jeffrey Heer, Jock D. Mackinlay, Chris Stolte, Maneesh Agrawala. *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'08)*, 14(6), pp. 1189-1196, Nov/Dec 2008. [26% Acceptance Rate]

Generalized Selection via Interactive Query Relaxation, Jeffrey Heer, Maneesh Agrawala, Wesley Willett. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 959-968, 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

Research Directions in Data Wrangling: Visualizations and Transformations for Usable and Credible Data. Sean Kandel, Jeffrey Heer, Catherine Plaisant, Jessie Kennedy, Frank van Ham, Nathalie Henry Riche, Chris Weaver, Bongshin Lee, Dominique Brodbeck, Paolo Buono. *To appear in Information Visualization Journal*, 2011.

A Tour through the Visualization Zoo. Jeffrey Heer, Michael Bostock, Vadim Ogievetsky. *Comm. of the ACM*, 53(6), pp. 59-67, Jun 2010.

Voyagers and Voyeurs: Supporting Asynchronous Collaborative Visualization, Jeffrey Heer, Fernanda Viégas, Martin Wattenberg. *Comm. of the ACM*, 52(1), pp. 87-97, Jan 2009.

Design Considerations for Collaborative Visual Analytics, Jeffrey Heer, Maneesh Agrawala. *Information Visualization Journal*, 7(1), pp. 49-62, 2008.

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

The Design of Sense.us, Jeffrey Heer. In T. Segaran, J. Hammerbacher (eds), *Beautiful Data*, O'Reilly Media, 2009.

Point, Talk, Publish: Visualization and the Web, Jeffrey Heer, Fernanda B. Viégas, Martin Wattenberg, Maneesh Agrawala. 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. 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

An Algorithm and Analysis of Social Topologies from Email and Photo Tags. T. J. Purtell, Diana MacLean, Seng Keat Teh, Sudheendra Hangal, Monica S. Lam, Jeffrey Heer. *Workshop on Social Network Mining & Analysis, ACM KDD*, Aug 2011.

All Friends are not Equal: Using Weights in Social Graphs to Improve Search. Sudheendra Hangal, Diana MacLean, Monica S. Lam, Jeffrey Heer. *Workshop on Social Networking Mining and Analysis, ACM KDD*, Aug 2010.

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, SIAM 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, SIAM Conference on Data Mining*, pp. 51-58. Chicago, IL, 2001.

Demos

Social Flows: A System for Mining Social Topologies from Ego-centric Social Networks. Diana MacLean, Sudheendra Hangal, Seng Keat Teh, Monica S. Lam, Jeffrey Heer. *ACM Knowledge Discovery and Data Mining (KDD)*, Aug 2010.

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

A Tour through the Visualization Zoo. Jeffrey Heer, Michael Bostock, Vadim Ogievetsky. *ACM Queue*. May 2010

A Conversation with Jeff Heer, Martin Wattenberg, and Fernanda Viégas. *ACM Queue*. March 2010

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.

AWARDS AND FELLOWSHIPS

2011 ACM CHI Best Paper Nominee

2010 IEEE InfoVis Best Paper Honorable Mention (x2)
ACM CHI Best Paper Nominee

2009 MIT Technology Review TR35, 35 Innovators Under the Age of 35
C.V. Ramamoorthy Distinguished Research Award, EECS Dept, UC Berkeley
ACM CHI Best Paper Award
IBM Faculty Award
Intel Faculty Award

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