

Biographical Sketch: Jeffrey Heer

Associate Professor, Computer Science & Engineering

University of Washington

URL: <http://jheer.org>

PROFESSIONAL PREPARATION:

Jun 2001 **University of California, Berkeley** B.S., Electrical Engineering & Computer Science
Honors Program Breadth Area: *Cognitive Science*
Dec 2004 **University of California, Berkeley** M.S., Computer Science
Dec 2008 **University of California, Berkeley** Ph.D., Computer Science
Dissertation: *Supporting Asynchronous Collaboration for Interactive Visualization*

APPOINTMENTS:

2013–Present **University of Washington**
Associate Professor, Computer Science & Engineering Department
2012–Present **Trifacta Inc.**
Co-Founder and Chief Experience Officer (CXO)
2009–2013 **Stanford University**
Assistant Professor, Computer Science Department

FIVE MOST RELEVANT PUBLICATIONS:

1. Identifying Medical Terms in Patient-Authored Text: A Scalable, Crowdsourcing-Based Approach. Diana MacLean, Jeffrey Heer. *Journal of the American Medical Informatics Association*, 2013.
2. Interpretation & Trust: Designing Model-Driven Visualizations for Text Analysis. Jason Chuang, Daniel Ramage, Chris Manning, Jeffrey Heer. *Proc. ACM Human Factors in Computing Systems (CHI)*, 2012.
3. Termite: Visualization Techniques for Assessing Textual Topic Models, Jason Chuang, Christopher D. Manning, Jeffrey Heer. *Proc. Advanced Visual Interfaces (AVI)*, 2012.
4. Topic Model Diagnostics: Assessing Domain Relevance via Topical Alignment. Jason Chuang, Sonal Gupta, Christopher D. Manning, Jeffrey Heer. *Proc. Intl Conf. on Machine Learning (ICML)*, 2013.
5. D3: Data-Driven Documents. Michael Bostock, Vadim Ogievetsky, Jeffrey Heer. *IEEE Trans. Visualization & Comp. Graphics (Proc. InfoVis'11)*, 2011.

FIVE OTHER PUBLICATIONS:

1. Enterprise Data Analysis and Visualization: An Interview Study. Sean Kandel, Andreas Paepcke, Joseph M. Hellerstein, Jeffrey Heer. *Proc. IEEE Visual Analytics Science & Technology (VAST)*, 2012. *Best Paper Honorable Mention*
2. “Without the Clutter of Unimportant Words”: Descriptive Keyphrases for Text Visualization. Jason Chuang, Christopher D. Manning, Jeffrey Heer. *ACM Transactions on Computer-Human Interaction*, 19(3), pp. 1-29, 2012.
3. The Efficacy of Human Post-Editing for Language Translation. Spence Green, Jeffrey Heer, Christopher D. Manning. *Proc. ACM Human Factors in Computing Systems (CHI)*, 2013. *Best Paper Award*
4. Strategies for Crowdsourcing Social Data Analysis. Wesley Willett, Jeffrey Heer, Maneesh Agrawala. *Proc. ACM Human Factors in Computing Systems (CHI)*, 2012.
5. Crowdsourcing Graphical Perception: Using Mechanical Turk to Assess Visualization Design. Jeffrey Heer, Michael Bostock. *Proc. ACM Human Factors in Computing Systems (CHI)*, pp. 203-212, 2010. *Best Paper Nominee*

EDUCATIONAL ACTIVITIES:

1. Visualization Courses. Developed and taught classes on Visualization at Stanford (2009-12) and UC Berkeley (2005-06). Developed special Visualization module for Social Science Methods course (2009-11). Developed new course on Research Topics in Interactive Data Analysis (2011).
2. Human-Computer Interaction Courses. Developed course on Social Software (2010). Re-developed and taught the classes Human-Computer Interaction Research (2009) and Interaction Design Studio (2011-13).
3. External course development. Co-organized half-day course on Visualization and Social Data Analysis at VLDB 2009. Co-organized half-day course on Computation and Journalism at SIGGRAPH 2008. Co-organizing half-day course on Visualization with D3 at InfoVis 2012.
4. Service. Participant in CHIME workshop at ACM CHI 2010 to promote computer science careers for students from historically disadvantaged backgrounds. Advisor in IEEE VisWeek 2010 Doctoral Colloquium.

SYNERGISTIC ACTIVITIES:

1. Developed *Prefuse*, *Flare*, *Protovis* and *D3.js* visualization tools, used across academia and industry by thousands of developers and millions of end users. D3.js is the 5th most “starred” project on GitHub.com.
2. Workshop organizer for Social Data Analysis workshops at ACM CHI 2008 and ACM CSCW 2010, perception workshop at CHI 2013, and workshop on language learning and visualization at ACL 2014.
3. Invited speaker to discuss recent trends in visualization and data analysis at the Conference on Innovative Data Systems Research (CIDR) 2009, ACM SIGMOD 2009, IBM NPUC 2010, HCIC 2010, Microsoft Faculty Summit 2010, NICAR 2011, The Economist Ideas Economy 2011, ASA Joint Statistical Meeting 2011, WikiSym 2011, DataEdge 2013, HCIC 2013 and Gordon Research Conference 2013.

COLLABORATORS:

Maneesh Agrawala (Berkeley), Cecilia Aragon (Washington), Magda Balazinska (Washington), Serafim Batzoglou (Stanford), Jeff Baumes (Kitware), Gill Bejerano (Stanford), Michael Bernstein (Stanford), Atul Butte (Stanford), Stuart Card (Stanford), Douglas Carmean (Intel), Bill Cleveland (Purdue), Jean-Daniel Fekete (INRIA), Li Fei-Fei (Stanford), James Fogarty (Washington), Emily Fox (Washington), Carlos Guestrin (Washington), Sonal Gupta (Stanford), Spence Green (Stanford), Pat Hanrahan (Stanford), Marti Hearst (Berkeley), Joseph Hellerstein (Berkeley), Bill Howe (Washington), Amy Jang (Google), Ashley Jin (Stanford), Dan Jurafsky (Stanford), Jessie Kennedy (Edinburgh Napier University), Scott Klemmer (UCSD), Monica Lam (Stanford), James Landay (Cornell Tech), Anna Lembke (Stanford), Jure Leskovec (Stanford), Jock Mackinlay (Tableau), Chris Manning (Stanford), Dan McFarland (Stanford), Miriah Meyer (Utah), Margaret Morris (Intel), Andreas Paepcke (Stanford), Adam Perer (IBM), Hanspeter Pfister (Harvard), Catherine Plaisant (U. Maryland), Dan Ramage (Google), Nathalie Riche (Microsoft), Will Schroeder (Kitware), Ben Shneiderman (U. Maryland), Arend Sidow (Stanford), John Stasko (Georgia Tech), Chris Stolte (Tableau), Maureen Stone (Tableau), Mike Stonebraker (MIT), Frank van Ham (IBM), Fernanda Viégas (Google), Martin Wattenberg (Google), Chris Weaver (Univ. of Oklahoma), Wesley Willett (INRIA), John D. Wilkerson (Washington), Terry Winograd (Stanford)

ADVISORS: Maneesh Agrawala (PhD, Berkeley), James A. Landay (MS, Berkeley)

DOCTORAL & POST-DOCTORAL ADVISEES:

Michael Bostock (Stanford PhD), Jason Chuang (Stanford PhD, UW Post-Doc), Cagatay Demiralp (Stanford Post-Doc), Sanjay Kairam (Stanford PhD), Sean Kandel (Stanford PhD), Zhicheng “Leo” Liu (Stanford Post-Doc), Diana MacLean (Stanford PhD), Arvind Satyanarayan (Stanford PhD), Jeffrey Snyder (UW PhD), Kanit Wongsuphasawat (UW PhD)

Biographical Sketch: Jason Chuang

Post-Doctoral Researcher, Computer Science & Engineering

University of Washington

URL: <http://jason.chuang.ca>

PROFESSIONAL PREPARATION:

- May 2002 **University of British Columbia**
Bachelor of Science in Mathematics
- June 2005 **Stanford University**
Master of Science in Scientific Computing and Computational Mathematics
- April 2013 **Stanford University**
Doctor of Philosophy in Computer Science
Dissertation Topic: *Designing Visual Text Analysis Methods to Support Sensemaking and Modeling*

APPOINTMENTS:

- 2013–Present **University of Washington**
Post-Doctoral Researcher, Computer Science & Engineering

FIVE MOST RELEVANT PUBLICATIONS:

1. “Topic Model Diagnostics: Assessing Domain Relevance via Topical Alignment” by Jason Chuang, Sonal Gupta, Christopher D. Manning, and Jeffrey Heer. *Proc. International Conference on Machine Learning (ICML). Atlanta, Georgia, 2013.*
2. “Recursive Models for Semantic Compositionality Over a Sentiment Treebank” by Richard Socher, Alex Perelygin, Jean Y. Wu, Jason Chuang, Christopher D. Manning, Andrew Y. Ng, and Christopher Potts. *Proc. Conference on Empirical Methods in Natural Language Processing (EMNLP). Seattle, Washington, 2013.*
3. “Interpretation and Trust: Designing Model-Driven Visualizations for Text Analysis” by Jason Chuang, Daniel Ramage, Christopher D. Manning, and Jeffrey Heer. *Proc. ACM Conference on Human Factors in Computing Systems (CHI). Austin, Texas, 2012.*
4. “Termite: Visualization Techniques for Assessing Textual Topic Models” by Jason Chuang, Christopher D. Manning, and Jeffrey Heer. *Proc. International Working Conference on Advanced Visual Interfaces (AVI). Capri Island, Italy, 2012.*
5. “‘Without the Clutter of Unimportant Words’: Descriptive Keyphrases for Text Visualization” by Jason Chuang, Christopher D. Manning, and Jeffrey Heer. *ACM Transactions on Computer-Human Interaction (TOCHI), 19 (3), pp. 1-29, October 2012.*

FIVE OTHER PUBLICATIONS:

1. “Differentiating Language Usage through Topic Models” by Daniel A. McFarland, Daniel Ramage, Jason Chuang, Jeffrey Heer, Christopher D. Manning, and Daniel Jurafsky. *Poetics: Special Issue on Topic Models and the Cultural Sciences, 41 (6). December 2013.*
2. “A Probabilistic Model of the Categorical Association between Colors” by Jason Chuang, Maureen Stone, and Pat Hanrahan. *Proc. Color Imaging Conference (CIC). Portland, Oregon, 2008.*
3. “RNA Sequencing Reveals Diverse and Dynamic Repertoire of the *Xenopus Tropicalis* Transcriptome Over Development” by Meng How Tan, Kin Fai Au, Arielle L. Yablonovitch, Andrea E. Wills, Jason Chuang, Julie C. Baker, Wing Hung Wong, and Jin Billy Li. *Genome Research, 23 (1), pp. 201-216. January 2013.*

4. “Document Exploration with Topic Modeling: Designing Interactive Visualizations to Support Effective Analysis Workflows” by Jason Chuang, Yuening Hu, Ashley Jin, John D. Wilkerson, Daniel A. McFarland, Christopher D. Manning, and Jeffrey Heer. *NIPS Workshop on Topic Models. Lake Tahoe, Nevada, 2013.*
5. “Topic Modeling for the Social Sciences” by Daniel Ramage, Evan Rosen, Jason Chuang, Christopher D. Manning, and Daniel A. McFarland. *NIPS Workshop on Applications for Topic Models. Vancouver, Canada, 2009.*

EDUCATIONAL ACTIVITIES:

1. Developed and taught a unit on text analysis and visualization at the Stanford Computational Social Science Workshop (Summer 2013)
2. Re-developed and taught lectures on color and text visualizations for the Stanford Visualization Class (Winter 2009, Fall 2011).

SYNERGISTIC ACTIVITIES:

1. Co-organizing a full-day workshop on Interactive Language Learning, Visualization, and Interfaces at ACL 2014

COLLABORATORS:

Jeffrey Heer (Stanford), Christopher D. Manning (Stanford), Daniel A. McFarland (Stanford), John D. Wilkerson (Univ. of Washington), Cecilia Aragon (Univ. of Washington), Pat Hanrahan (Stanford), Maureen Stone (StoneSoup Consulting), Daniel Jurafsky (Stanford), Andrew Y. Ng (Stanford), Christopher Potts (Stanford), Julie C. Baker (Stanford), Wing Hung Wong (Stanford), Jin Billy Li (Stanford), Geoffrey J. Gordon (CMU), Robert Rohling (Univ. of British Columbia), Septimiu E. Salcudean (Univ. of British Columbia), Martin Wattenberg (Google), Fernanda Viégas (Google), Holger Winnemöller (Adobe), Gary Bradski (Intel), Daniel Ramage (Stanford), Sonal Gupta (Stanford), Spence Green (Stanford), Mengqiu Wang (Stanford), Katie Kuksenok (Univ. of Washington), Richard Socher (Stanford), Alex Pereygin (Stanford), Jean Y. Wu (Stanford), Rebecca Weiss (Stanford), Ashley Jin (Stanford), Evan Rosen (Stanford), Meng How Tan (Stanford), Kin Fai Au (Stanford), Arielle L. Yablonovitch (Stanford), Andrea E. Wills (Stanford), Chih-Han Yu (Stanford), Brian Gerkey (Stanford), Stephen Okazawa (Univ. of British Columbia), Richelle Ebrahimi (Univ. of British Columbia), Yuening Hu (Univ. of Maryland, College Park)

PH.D. ADVISOR:

Jeffrey Heer (Stanford) and Christopher D. Manning (Stanford)