Matthew Brehmer

Postdoctoral Researcher, Microsoft Research
PhD, MSc, BComp
Seattle, Washington

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Research Interests

Data visualization / information visualization, human-computer interaction, cognitive science, visual analytics, task analysis, data-driven storytelling & journalism.

Education

University of British Columbia — Vancouver, Canada
Doctor of Philosophy (Computer Science) — **2011 – 2016**
Dissertation: *Why Visualization? Task Abstraction for Analysis and Design*
Supervisory committee: Tamara Munzner (chair), Joanna McGrenere, & Ron Rensink

Master of Science (Computer Science, Sub-Specialization in Human Computer Interaction) — **2009 – 2011**
Thesis: *Usability and the Effects of Interruption in C-TOC: Self-Administered Cognitive Testing on a Computer.*
Supervised by Joanna McGrenere & Claudia Jacova

Queen's University — Kingston, Canada
Bachelor of Computing (Honours) with Distinction — **2004 – 2009**
Specialization in Cognitive Science with Professional Internship

Publications

* papers accepted

Timelines Revisited: A Design Space and Considerations for Expressive Storytelling. — **2016**
Brehmer, Lee, Bach, Henry Riche, & Munzner. To appear in *IEEE Trans. Visualization & Computer Graphics. (TVCG).*

Matches, Mismatches, and Methods: Multiple-View Workflows for Energy Portfolio Analysis. — **2016**
Brehmer, Ng, Tate, & Munzner. In *IEEE Trans. Visualization & Computer Graphics / Proc. InfoVis 2015, 22(1). p. 449-458.* 39 / 178* (22%)

TimeLineCurator: Interactive Authoring of Visual Timelines from Unstructured Text. — **2016**
Fulda, **Brehmer**, & Munzner. *IEEE Trans. Visualization & Computer Graphics / Proc. Visual Analytics Science & Technology (VAST 2015), 22(1). p.300-309.* 31 / 149* (21%)

Overview: The Design, Adoption, and Analysis of a Visual Document Mining Tool For Investigative Journalists. — **2014**
Brehmer, Ingram, Stray, & Munzner. *IEEE Trans. Visualization & Computer Graphics / Proc. InfoVis,* 20(12). p. 2271-2280. 45 / 196* (23%)

Visualizing Dimensionally-Reduced Data: Interviews with Analysts and a Characterization of Task Sequences. — **2014**
Brehmer, Sedlmair, Ingram, & Munzner. *Proc. ACM Workshop on BEyond time and errors: novel evaLuation methods for Information Visualization (BELIV).* p1-8. 23 / 30* (77%)

Pre-Design Empiricism for Information Visualization: Scenarios, Methods, and Challenges. — **2014**
Brehmer, Carpendale, Lee, & Tory. *Proc. ACM Workshop on BEyond time and errors: novel evaLuation methods for Information Visualization (BELIV).* p.147-151. 23 / 30* (77%)

C-TOC (Cognitive Testing on Computer): Investigating the Usability and Validity of a Novel Self-administered Cognitive Assessment Tool in Aging and Early Dementia. Jacova, McGrenere, Lee, Wang, Le Huray, Corenblith, **Brehmer**, Tang, Hayden, Beattie, & Hsiung. *Alzheimer and Related Disorders.* — **2014**

A Multi-Level Typology of Abstract Visualization Tasks. — **2013**
Brehmer & Munzner. *IEEE Trans. Visualization & Computer Graphics / Proc. InfoVis,* 19(12), p. 2376–2385. 38 / 152* (25%)

Investigating Interruptions in the Context of Computerised Cognitive Testing for Older Adults — **2012**
Brehmer, McGrenere, Tang, & Jacova. *Proc. ACM Conf. Human Factors in Computing Systems (CHI),* p.2649-2658. 370 / 1577* (23%)

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Publications (cont.)

The Haptic Crayola Effect: Exploring the Role of Naming in Learning Haptic Stimuli. Hwang, Maclean, **Brehmer**, Hendy, Sotirakopoulos, & Choi. *Proc. IEEE World Haptics Conference (WHC)*, p. 385-390. **2011**

Activate Your GAIM: A Toolkit for Input in Active Games. **2010**
Brehmer, Graham, & Stach. Proc. ACM Academic Conference on the Future of Game Design and Technology (Future Play), p. 151-158.

Classifying Input for Active Games. **2009**
Stach, Graham, **Brehmer**, & Hollatz. Proc. ACM Advances in Comp. Entertainment (ACE), p. 379-382.

Doctoral Colloquium

Visualization Task Abstraction from Multiple Perspectives. **2014**
Brehmer. Presentation and Poster at the IEEE VIS Doctoral Colloquium. 18 / 30*

Research Community Service

External Reviewer **2013 – 2016**
IEEE VIS (InfoVis, VAST), IEEE Transactions on Visualization & Computer Graphics (TVCG)
The Eurographics Conference on Visualization (EuroVis), Sage Information Visualization
ACM Transactions on Human-Computer Interaction (TOCHI)
ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)

Student Volunteer
ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) **2011, 2013, 2015, 2016**

University Service

University of British Columbia Department of Computer Science Vancouver, Canada
Graduate Admissions and Recruitment Committee **2013 – 2015**

University of British Columbia Computer Science Graduate Students' Association Vancouver, Canada
Vice President (Social Events) **2010 – 2011**
Graduate Student Orientation Committee **2012**
Un-Distinguished Lecture Series Organizer **2010 – 2011, 2012 – 2013**

Industry Experience

Microsoft Research Redmond, USA
Postdoctoral Researcher, neXus Group **Oct 2016 - present**

Microsoft Research Redmond, USA
Research Intern; mentor: Bongshin Lee (neXus Group) **Summer 2015**

EnerNOC (formerly Pulse Energy) Vancouver, Canada
Mitacs-Accelerate Graduate Research Intern **2013 – 2014**

EMC Toronto, Canada
User Experience Design Intern **2007 – 2008**

Teaching Experience

University of British Columbia Department of Computer Science Vancouver, Canada
Guest Lecturer: *Information Visualization* (CPSC 547) **2014, 2015**
Guest Lecturer: *Introduction to Human Computer Interaction Methods* (CPSC 344) **2012 – 2013**
Teaching Assistant: *Advanced Human Computer Interaction Methods* (CPSC 444) **2010**
Teaching Assistant: *Introduction to Human Computer Interaction Methods* (CPSC 344) **2009**

Honours & Awards

University of British Columbia Department of Computer Science Student Service Award **2016**
University of British Columbia Department of Computer Science Volunteering Award **2015**
Mitacs-Accelerate Graduate Research Internship Program Award **2013 – 2014**
Natural Sciences & Engineering Research Council of Canada (NSERC) Postgraduate Scholarship **2011 – 2014**
University of British Columbia Four Year Doctoral Fellowship **2011 – 2015**
University of British Columbia Department of Computer Science Merit Scholarship **2009 – 2011**
Queen's University Dean's Entrance Scholarship in Computing **2004 – 2005**