

Scott Bateman

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Research Statement

I am broadly interested in the field of Human-Computer Interaction, and investigating how technologies for collaboration may be better designed as they play an increasing role in society. My primary research interests have focussed on the use of collaborative software to share knowledge and experience. My master's thesis was an investigation of different technologies for students to construct and share ideas. My PhD dissertation has formed through the realization that explicit approaches for creating and sharing knowledge will always be limited, as they demand a lot of users in terms of effort. Within this framing I am researching how experiences can be shared between collaborators in everyday information seeking (searching and browsing the Web). Most often people can benefit from receiving the guidance of other people, and do not mind sharing their own experiences; as long as there is little-to-no effort for them to do so. My work examines how interaction history – the cumulative traces of interactions from using digital objects like webpages – can be captured, visualized and shared to guide people to be more successful in searching the Web and in working together.

As a secondary research interest I investigate the roles visual features (e.g., embellishments) and interaction techniques (e.g., performance assistance) can have in influencing people's ability and experience in interacting with technology. I have found that while previous research findings in Human-Computer Interaction have provided a good basis for guiding the design of technology, there is still a lot that could be understood about how people perceive information displays, at a basic level. Subtle differences in visual features and interactions can, and do, have a large impact on the choices people make, and their ability to interact with and make sense of information.

Education

- 2008 – present **Doctor of Philosophy, Candidate (Computer Science)**
University of Saskatchewan, Saskatoon, SK, Canada
Thesis Supervisors: Prof. Carl Gutwin and Prof. Gordon McCalla
- 2005 – 2007 **Master of Science** with Certificate in University Teaching
University of Saskatchewan, Saskatoon, SK, Canada
- 1997 – 2001 **Bachelor of Science, First-class Honours**
University of Prince Edward Island, Charlottetown, PE, Canada

Honours and Awards

- 2011 **Honourable Mention Award**, for the paper *Using Target Assistance for Subtly Balancing Competitive Play*, ACM Conf. on Human-Factors in Computing (CHI '11).

- 2010 **Best Paper Award**, for the paper *Useful Junk? The Effects of Visual Embellishments on the Comprehension and Memorability of Charts*, ACM Conf. on Human-Factors in Computing (CHI '10).
- 2006 **Best group project**. Summer School on Personalized E-Learning, National College of Ireland, Dublin.
- 2006 **1st Place in the Demo Competition**, 2006 LORNET Conference, demonstration of the Open Annotation and Tagging System.
- 1998, 1999 **CIS Varsity Athlete Academic-All Canadian**, as a member of the University of Prince Edward Island varsity basketball team.

Scholarships and Fellowships

- 2011 **Student Travel Award**, Univ. of Sask., for CHI 2011, Vancouver.
- 2011 **Faculty Scholarship**. Univ. of Sask.
- 2011 **Walter C. Sumner Memorial Fellowship**, Walter C. Sumner Foundation.
- 2010 **Student Travel Award**, Univ. of Sask., for CHI 2010, Atlanta.
- 2008 – 2011 **National Post Graduate Scholarship**. Natural Sciences and Engineering Research Council (NSERC).
- 2008 – 2010 **NSERC Holder's Scholarship**., Univ. of Sask.
- 2008 – 2010 **Faculty Scholarship**. Univ. of Sask.
- 2007 – 2008 **LORNET Research Fellowship**, Univ. of Sask.
- 2007 **Student Travel Award**, World Wide Web Conference, Banff, Canada.
- 2005 – 2007 **College of Graduate Studies and Research Scholarship**, Univ. of Sask.
- 2005 – 2007 **Graduate Teaching Fellowship**, Univ. of Sask.

First-Authored Peer-Reviewed Publications

- CHI 2011 Scott Bateman, Tadeusz Stach, Regan L. Mandryk, Carl Gutwin. **Using Target Assistance for Subtly Balancing Competitive Play**. *Proceedings of ACM Conf. on Human Factors in Computing Systems (CHI 2011)*. May 7-12th, 2011. Vancouver, Canada. 2355-2364. *Honorable Mention Award*.
- HCIR 2011 Scott Bateman, Carl Gutwin, Gordon McCalla, Ryen White. (2011) **Collective Information Seeking: Supporting Search with Low-Cost Activity Sharing and Collaboration**. *Proceedings of the Fifth Workshop on Human-Computer Interaction and Information Retrieval (HCIR 2011)*. Oct. 2011. Mountain View, CA, USA. 4 pages. *to appear*.
- CHI 2010 Scott Bateman, Regan L. Mandryk, Carl Gutwin, Aaron Genest, David McDine, Christopher Brooks. **Useful Junk? The Effects of Visual Embellishments on the Comprehension and Memorability of Charts**. *Proceedings of ACM Conference on Human Factors in Computing Systems*. April 10 - 15, 2010. Atlanta, GA, USA. pp. 2573-2582. *Best paper award*.
- CSCW DC 2010 Scott Bateman. (2010) **Using Group Interaction History in the Wild**. *Extended Proceedings of the Doctoral Colloquium of the 2010 ACM Conference on Computer Supported Collaborative Work (CSCW 2010)*. February 6 -10, 2010. Savannah, USA. pp. 523 - 524.

- Group 2009 Scott Bateman, Michael Muller, Jill Freyne. **Personalized Retrieval in Social Bookmarking**. *Proceedings of the ACM Conference on Supporting Group Work (Group 2009)*. May 10 - 13, 2009. Sanibel Island, Florida. pp. 91-94.
- EICS 2009 Scott Bateman, Carl Gutwin, Nathaniel Osgood, Gordon McCalla. **Interactive Usability Instrumentation**. *Proceedings of the ACM Symposium on Engineering Interactive Computing Systems (EICS 2009)*. July 14-17, 2009. Pittsburgh, PA. pp. 45-54.
- HT 2008 Scott Bateman, Carl Gutwin, Miguel Nacenta. **Seeing Things in the Clouds: The Effect of Visual Features on Tag Cloud Selections**. *Proceedings of ACM Conference on Hypertext and Hypermedia (HT 2008)*. Pittsburgh, US. June 16-20, 2008. pp. 193-202.
- ITS-W 2008 Scott Bateman, Christopher Brooks, Gord McCalla, Jim Greer. (2008) **Learning Object Metadata: From the locally prescribed to the socially derived**. In the *Workshop for Semantic-Web Resource Repository Design, Search, and Management. Ninth International Conference on Intelligent Tutoring Systems (ITS 2008)*. June 23, 2008. Montreal, Canada. 10 pp.
- SWUI 2008 Scott Bateman, Jelena Jovanovic, Carlo Torniai, Dragan Gasevic, Marek Hatala. (2008) **Combined Usage of Ontologies and Folksonomies in E-learning Environments**. In the *Proceedings of the Semantic Web User Interaction Workshop* held in conjunction with *ACM Conference on Human Factors in Computing Systems (CHI 2008)*. Florence, Italy, April 5, 2008. 4 pages.
- WWW 2007 Scott Bateman, Christopher Brooks, Gordon McCalla, Peter Brusilovsky. **Applying Collaborative Tagging to E-Learning**. *Workshop Proc. of Tagging and Metadata for Social Information Organization in conjunction with the International World Wide Web Conference (WWW 2007)*, May 8, 2007. Banff, Canada, 2007. 7 pages.
- LORNET 2006A Scott Bateman, Rosta Farzan, Peter Brusilovsky, Gordon McCalla. (2006) **OATS: The Open Annotation and Tagging System**. *Proceedings of the Third Annual International Scientific Conference of the Learning Object Repository Research Network (LORNET 2006)*, Montreal, November 8-10, 2006. 10 pages.
- AH 2006 S. Bateman, C. Brooks, G. McCalla. **Collaborative Tagging Approaches for Ontological Metadata in Adaptive E-Learning Systems**. *Workshop Proceedings of the 4th International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems (AH2006)*, June 20, 2006. Dublin, Ireland. pp. 3-12.

Non-First-Authored Peer-Reviewed Publications

- UIST 2011 David Flatla, Carl Gutwin, Lennart Nacke, **Scott Bateman**, Regan Mandryk. **Calibration Games: Making Calibration Tasks Enjoyable by Adding Motivating Game Elements**. *Proceedings of ACM Conference on User Interface Software Technology (UIST 2011)*, Santa Barbara, California. October 16-19, 2011. 10 pages. *To appear*.
- SWEL 2009 Christopher Brooks, **Scott Bateman**, Jim Greer, Gord McCalla. (2009) **Lessons Learned using Social and Semantic Web Technologies for E-Learning**. Chapter 14 in *Semantic Web Technologies for e-Learning, Vol. 4 (The Future of Learning)*, November 2009. ISBN: 978-1-60750-062-9, pp. 260 - 278.
- ILE 2009 Jelena Jovanovic, Dragan Gasevic, Carlo Torniai, **Scott Bateman**, Marek Hatala, (2009) **The Social Semantic Web in Intelligent Learning Environments-State of the Art and Future Challenges**. *Interactive Learning Environments Journal*, Volume 17, Number 4, pp. 273-308.

- ICSC 2008 Carlo Torniai, Jelena Jovanovic, Dragan Gasevic, **Scott Batemen**, Marek Hatala. (2008) Leveraging Folksonomies for Ontology Evolution in E-learning Environments. *Proceedings of Second IEEE International Conference on Semantic Computing (ICSC 2008)*. Santa Clara, CA, USA - August 4-7, 2008. pp. 206-213.
- ICALT 2008 Carlo Torniai, Jelena Jovanovic, Dragan Gasevic, **Scott Batemen**, Marek Hatala. (2008) **E-Learning Meets the Social Semantic Web**. *Proceedings of The 8th IEEE International Conference on Advanced Learning Technologies (ICALT 2008)*. Santander, Cantabria, Spain, July 1st-5th, 2008. pp. 389-393.
- ITS 2008 Jelena Jovanovic, Carlo Torniai, Dragan Gasevic, **Scott Bateman**, Marek Hatala. (2008) **Leveraging the Social Semantic Web in Intelligent Tutoring Systems**. *Proceedings of the Conference on Intelligent Tutoring Systems (ITS 2008)*. Montreal, Canada, June 23-27, 2008. pp. 563-572.
- ITS 2006 Christopher Brooks, **Scott Bateman**, Gordon McCalla, Jim Greer. (2006) **Applying the Agent Metaphor to Learning Content Management Systems and Learning Object Repositories**. *Proceedings of the 8th International Conference on Intelligent Tutoring Systems (ITS2006)*, June 26 – June 30, 2006. Jhongli, Taiwan. pp. 808-810.
- LORNET 2006B Christopher Brooks, **Scott Bateman**, Wengang Liu, Gordon McCalla, Jim Greer, Dragan Gasevic, Timmy Eap, Griff Richards, Khaled Hammouda, Shady Shehata, Mohamed Kamel, Fakhri Karray, Jelena Jovanovic. (2006) **Issues and Directions with Educational Metadata**. *Proceedings of the Third Annual International Scientific Conference of the Learning Object Repository Research Network (LORNET 2006)*, Montreal, PQ, November 8-10, 2006. 9 pages.

Industrial Research Experience

- 2011 **Research Intern**, Microsoft Research, Redmond, Washington, USA.
Mentors: Ryen White and Jaime Teevan
 Developed and conducted a large user study of an interface for reflection and feedback on web search behavior to promote positive behavior change. (submission CHI 2012).
- 2008 **Research Intern**, Center for Social Software, IBM Research, Cambridge, Mass., USA.
Mentors: Michael Muller and Jill Freyne
 Conducted large-scale log analysis of system usage by over 10,000 users in the Dogear social bookmarking system. (published Group 2009).
- 2006 **Research Intern**, Department of Informatics, National College of Ireland, Dublin.
Mentors: Peter Brusilovsky and Stephan Weibelzahl
 Performed research for a consortium of Irish e-learning companies. Designed and developed the Open Annotation and Tagging System. (published WWW 2007).

Teaching and Related Work Experience

- Winter 2010 **Sessional Lecturer**, Univ. of Sask. – created and gave lectures, assignments and exams for a 39-student, fourth-year undergraduate course in Human-Computer Interaction.
- 2005-2007 **Tutorial Leader**, Univ. of Sask. – created instructional materials and lectured for courses in Introductory Programming, Web Programming, and Artificial Intelligence.
- 1999-2005 **Web Developer and Consultant** – created a number of web-based applications including an airline reservation and ticketing system as a consultant, and as a senior developer for the Government of Prince Edward Island website (www.gov.pe.ca).

Student Supervision

- Summer 2011 Summer 2011 Co-supervised undergraduate student Graham Erickson (Univ. of Sask.) in developing a multi-agent system for simulating student behaviors in e-learning environments (leading to a journal submission – in preparation).
- Summer 2010 Co-supervised undergraduate student Robert Xiao (Univ. of Waterloo) in developing an experimental system, led to a submission to the GI 2011.
- Co-supervised undergraduate student Graham Erickson (Univ. of Sask.) in developing a toolkit for the large-scale analysis of logged web browser interactions leading to a conference submission.
- Co-supervised undergraduate student Stephen Damm (Univ. of Sask.) in developing an experimental system, led to a paper accepted at CHI 2011.
- Summer 2009 Co-supervised undergraduate student Robert Xiao (Univ. of Waterloo) in developing two experimental systems, led to a journal submission (in preparation).
- Supervised visiting undergraduate student Quentin Roy (Univ. de Nantes, France), in the development of the website and digital library for iaied.org, summer 2009.

Invited Talks and Guest Lectures

- 2010 **The Anatomy of a Search Engine: A brief introduction to Information Retrieval.** Lecture given to third-year undergraduate course in Artificial Intelligence (CMPT 317), at the University of Saskatchewan, November 2010, for Dr. Gordon McCalla.
- 2010 **Low-Fidelity Prototyping.** Guest lecture presented to the graduate Advanced Human Computer Interaction class (CMPT 811) at the University of Saskatchewan, October 2010, for Dr. Carl Gutwin.
- 2010 Invited Panellist for the **What I wish I had known before I started as graduate student sessional instructor** panel. Presented to the Graduate Student Teaching and Learning Workshop, University of Saskatchewan, September 1, 2010.
- 2009 **Aspect-Oriented Programming and Software Logging.** Lecture given to the graduate Advanced Software Engineering class (CMPT 816) at the University of Saskatchewan, October 2009, for Dr. Nathaniel Osgood.
- 2009 **Information Visualization.** Lecture given to the graduate Human Computer Interaction class (CMPT 811) at the University of Saskatchewan, March 2009, for Dr. Regan Mandryk.
- 2009 **Semantic Networks, WordNet, and the Web as a Knowledgebase.** Lecture given to second year Computational Linguistics class (CMPT 298) at the University of Saskatchewan, March 2009, for Dr. Gordon McCalla.
- 2007 Scott Bateman. **Effectively Describing and Using Web Resources** Invited talk presented to the PAWS Lab, at the University of Pittsburgh, April 2, 2007.
- 2007 Scott Bateman, Christopher Brooks **The Web After 20 Years: A Convergence or Divergence of Ideas.** Invited talk presented at the Saskatchewan Interactive Conference, Saskatoon, Saskatchewan, March 8, 2007.
- 2006 Scott Bateman. **How Can We Describe and Use Digital Learning Materials More Effectively?** Invited talk presented to Adaptive Web Systems Group at the University of Leeds, UK, September 5, 2006.

Committee Member

- ACM Conference on Human Factors in Computing Systems (CHI 2009) - Work-In Progress Committee Member – solicited reviewers, provided meta-reviews and made acceptance recommendations for 10 short papers.
- Extended Semantic Web Conference (ESWC) 2010, 2011 – Programme Committee Member for the Social Web Track – recommendation on 2 (2010) and 1 (2011) papers.
- Workshop on Adaptation for the Social Web 2008 – Committee Member – recommendation on 3 papers.
- International Workshop on Interacting with Multimedia Content in the Social Semantic Web 2008 – Committee Member – recommendation on 3 papers.

Reviewing

- CHI – 2009 (4 papers), 2010 (2), 2011(4), CHI 2012 (5)
- CSCW – 2008 (1), 2010 (1), 2011 (1), 2012 (1)
- HCIR – 2011 (3)
- UIST – 2010 (2)
- Graphics Interface – 2008 (1), 2011 (2)
- Extended Semantic Web Conference (ESWC) – 2010 (2) and 2011 (1).
- International Journal of Human-Computer Studies (IJHCS) – 2009 (1), 2010 (2)
- Journal of Systems and Software – 2010 (1)
- IEEE Transactions on Learning Technology – 2010 (1)
- Journal of Interactive Learning Environments – 2009 (1)
- International Learning Object Research Network Conference – 2007 (2)
- European Conference on Technology Enhanced Learning – 2007 (2), 2009 (2)
- International Conference of Artificial Intelligence in Education – 2007 (3)
- Workshop on Data Mining for User Modeling – 2007 (1)

Other Activities

- Executive member of the Computer Science Graduate Student Course Council '06-07, '08-09, '09-10
- Student conference volunteer Group 2009, CHI 2009, CHI 2010, CHI 2011
- Webmaster for the International Artificial Intelligence in Education Society (iaied.org) and for the Interaction Lab (hci.usask.ca).

Personal

- Volunteer basketball coach with the Saskatoon Dunkaroos (5-7 year olds).
- Former varsity basketball player.
- I stay active playing recreational basketball and soccer.
- I enjoy camping trips with my wife and two children.