Mark Hancock

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Education:

Ph.D. 2009 (Expected)
  Computer Science, University of Calgary
  Supervisor: Dr. Sheelagh Carpendale
  Topic: Human-Computer Interaction
  Thesis Title: 3D Interaction on Tabletop Displays

M.Sc. 2004
  Computer Science
  Supervisor: Dr. Kellogg S. Booth
  Topic: Human-Computer Interaction
  Thesis Title: Improving Menu Placement Strategies for Pen Input

B.Sc. 2002
  Computing Science and Mathematics, Simon Fraser University
  Combined Honours

Research Interests: Human-computer interaction, collaboration, computer-supported cooperative work, tabletop displays, large-screen displays, 3D interaction, direct vs. indirect pen-input.

MOST SIGNIFICANT RESEARCH CONTRIBUTIONS

The two papers: (1) Shallow-depth 3D interaction: Design and evaluation of one-, two- and three-touch techniques and (2) Supporting multiple off-axis viewpoints at a tabletop display, represent a large part of my Ph.D. thesis. As such, I was the primary author and the lead in all phases of the research and writing, with the other author(s) serving primarily to support my efforts. These phases included the implementation of various interaction techniques and display alternatives, as well as the design, execution and evaluation of the corresponding user study. These papers demonstrate my ability to independently conduct and publish research relevant to the HCI community.

In the work described in the first paper, I planned and conducted all aspects of the user study, incorporating advice from the other two authors. I chose to submit this work to the Conference on Human Factors in Computing Systems (CHI) because it is the premier conference in my area of research, with the most rigorous review process. This paper was chosen as one of 142 papers from 571 submissions (25% acceptance rate) and additionally distinguished with a nomination for a best paper award. At CHI, I presented this work in front of an audience that included the leading researchers in my field. Later, I was told that the talk was so popular that a display had to be set up outside the auditorium to allow those who could not fit inside to see my presentation, and that some of these outside viewers vocalised their excitement about the work I was presenting.

In the work described in the second paper, I designed and implemented several techniques for many people to view 3D artifacts from multiple sides of a table. I chose to publish this work at the Tabletop conference because, while new, it is the only conference specifically targeted toward tabletop display research. By publishing to this audience, the community of tabletop researchers are more likely to be aware of this work and be able to leverage it in their own research.

Publications (1) and (2) demonstrate my independence as a researcher; however, I also have many publications that involve collaborative work. In particular, I published the paper: (3) Rotation and translation mechanisms for tabletop interaction at the Tabletop conference in its first year. This paper describes a synthesis of the research done independently at the University of Calgary's Interactions Lab and Mitsubishi Electric Research Labs prior to my involvement with both. As lead author, I orchestrated this effort in order to bring together alternate approaches to the same problem (rotation of artifacts on a table) in such a way that others in the community could easily leverage the benefits of the various techniques. As evidence of the success of this endeavour, this paper has since been cited in conferences such as CHI 2007.

WORK EXPERIENCE

Research

RESEARCH INTERN   Jul - Aug 2005
  Intel Corporation
  Supervisor: John David Miller
  Focus: 3D distributed collaboration

RESEARCH INTERN   Jun - Aug 2004
  Mitsubishi Electric Research Laboratories
  Supervisor: Chia Shen
  Focus: Tabletop display interaction

RESEARCH ASSISTANT   May - Aug 2002
  Queen's University
  Supervisor: Roel Vertegaal
  Focus: 3D realistic human facial animation

RESEARCH ASSISTANT   May 2001 - Apr 2002
  Simon Fraser University
  Supervisor: Kori M. Inkpen
  Focus: Tabletop collaboration

Teaching

SESSIONAL INSTRUCTOR   Jan 2009 - Present
  University of Calgary
  Course: Introduction to Computer Science for Multidisciplinary Studies II

TEACHING ASSISTANT   Sep - Dec 2004
  University of Calgary
  Supervisor: James Tam
  Course: Human-Computer Interaction I

TEACHING ASSISTANT   Jan - Dec 2003
  University of British Columbia
  Supervisors: Paul Carter, Ian Cavers, Patrice Belleville, Kellogg Booth, Ed Knorr, Margaret Dulat
  Courses: Principles of software development, Program design & data structures

PRIVATE TUTOR   1995 - 1999

Other

SYSTEMS ANALYST   Sep 2000 - Apr 2002
  Simon Fraser University

PROGRAMMER   Jun - Aug 1999 and 2000
  Legasys Corporation

PROFESSIONAL ACTIVITIES

Honours and Awards

Nomination for Best Paper Award: ACM SIGCHI 2007	2007
Alberta Ingenuity Studentship	2005-Present
NSERC Postgraduate Scholarship D	2005-2007
University of Calgary Dean's Entry Scholarship	2004
NSERC Postgraduate Scholarship A	2002-2004
Advanced Systems Institute Scholarship	2002
Computing Research Association Outstanding Undergraduate Honourable Mention	2002
NSERC USRA	2001
Simon Fraser Open Scholarship	1998-2001
Kenneth-Strandt National Entrance Scholarship	1997
René Descartes Entrance Scholarship (Declined)	1997

University Committees

For Women in Computer Science Committee, University of British Columbia	2003-2004
Computer Science Graduate Society President, University of Calgary	2005-2006

Conference Committees

Student Volunteer Chair, IEEE Tabletop	2007
Posters & Demos Chair, IEEE Tabletops and Interactive Surfaces	2008
Program Committee, IEEE Tabletops and Interactive Surfaces	2008
Work-in-Progress Committee, ACM SIGCHI 2009	2009

Invited Talks

Smart Technologies	Jun 2007
Talk Title: Shallow-Depth 3D Interaction	

Reviewing

Computer Graphics International	2004
ACM Conference on Computer Supported Cooperative Work	2004
Graphics Interface	2005, 2006
IEEE Information Visualization	2005
IEEE Computer Graphics & Applications	2006
ACM SIGCHI Conference on Human Factors in Computing Systems	2006, 2008, 2009
IEEE International Workshop on Horizontal Interactive Human-Computer Systems	2006, 2007
Interacting with Computers	2007

PUBLICATIONS

Refereed Journal Papers

1. Rhian Davies, Mark Hancock, and Anne Condon. Perspectives: Canadian women in computer science. Encyclopedia of Computer Science and Engineering. Wiley InterScience. To Appear.

2. Chia Shen, Kathy Ryall, Clifton Forlines, Alan Esenther and Frederic D. Vernier, Katherine Everitt, Mike Wu, Daniel Wigdor, Meredith Ringel Morris, Mark Hancock, and Edward Tse. Informing the design of direct-touch tabletops. IEEE Computer Graphics and Applications, 26(5):36-46, 2006.

Refereed Conference Papers

3. Mark Hancock and Sheelagh Carpendale**.** Supporting multiple off-axis viewpoints at a tabletop display. In Proc. Tabletop, pp. 171-178, 2007.

4. Mark Hancock, Sheelagh Carpendale, and Andy Cockburn. Shallow-depth 3D interaction: Design and evaluation of one-, two- and three-touch techniques. In Proc. CHI 2007, pp. 1147-1156, 2007.

5. Uta Hinrichs, Mark Hancock, Christopher Collins, and Sheelagh Carpendale. Examination of text-entry methods for tabletop displays. In Proc. Tabletop, pp. 105-112, 2007.

6. Jeroen Keijser, Sheelagh Carpendale, Mark Hancock, and Tobias Isenberg. Exploring 3D interaction in alternate control-display space mappings. In Proc. 3DUI, pp. 17-24, 2007.

7. Edward Tse, Mark Hancock, and Saul Greenberg. Speech filtered bubble cursor: Improving target acquisition on display walls. In Proc. ICMI, 2007.

8. Mark S. Hancock, John David Miller, Saul Greenberg, and Sheelagh Carpendale. Exploring visual feedback of change conflict in a distributed 3D environment. In Proc. AVI 2006, pp. 209-216, 2006.

9. Mark S. Hancock, Frédéric Vernier, Daniel Wigdor, Sheelagh Carpendale, and Chia Shen. Rotation and translation mechanisms for tabletop interaction. In Proc. Tabletop, pp. 79-86, 2006.

10. Torre Zuk, Lothar Schlesier, Petra Neumann, and Mark S. Hancock and Sheelagh Carpendale. Heuristics for information visualization evaluation. In Proc. AVI 2006 (BELIV Workshop), pp. 55-60, 2006.

11. Mark S. Hancock, Chia Shen, Clifton Forlines, and Kathy Ryall. Exploring non-speech auditory feedback at an interactive multi-user tabletop. In Proc. Graphics Interface 2005, pp. 41-50, 2005.

12. Mark S. Hancock, Rhian Davies, and Joanna McGrenere. Focus on women in computer science. In Western Canadian Conference on Computing Education, 2004.

13. Mark S. Hancock and Kellogg S. Booth. Improving menu placement strategies for pen input. In Graphics Interface 2004, pp. 221-230, 2004.

Refereed Short Papers

14. Chia Shen, Mark S. Hancock, Clifton Forlines, and Frédéric D. Vernier. Cor²ds: Context-rooted rotatable draggables. In CHI 2005 Extended Abstracts, pp. 1781-1784, 2005.

Refereed Posters, Videos and Demos

15. Mark Hancock. 3D tabletop display interaction. In Proc. UIST 2007 Extended Abstracts, 2007.

Technical Reports

16. Jens Grubert, Mark Hanckock, Sheelagh Carpendale, Edward Tse and Tobias Isenberg. Interacting with Stroke-Based Rendering on a Wall Display. Technical Report TR-2007-882-34, University of Calgary, 2007.

17. Mark S. Hancock and Sheelagh Carpendale. The complexities of computer-supported collaboration. Technical Report TR-2006-812-05, University of Calgary, 2006.

18. Tara Whalen, Vicki Ha, Kori M. Inkpen, Regan L. Mandryk and Stacey D. Scott, and Mark S. Hancock. Direct intentions: The effects of input devices on collaboration around a tabletop display. Technical Report, Dalhousie University, 2004.

19. Mark S. Hancock. A bayesian network model of a collaborative interactive tabletop display. Technical Report TR-2003-18, University of British Columbia, 2003.

Theses

20. Mark Hancock. Improving Menu Placement Strategies for Pen Input. Master's thesis, The University of British Columbia, 2004.

Workshop Participation

21. Workshop: Beyond time and errors: novel evaluation methods for information visualization (BELIV). ACM Advanced Visual Interfaces, Venice, Italy, 2006.

22. Workshop: Evaluating Co-located Collaborative Technologies. ACM CSCW'02 Conference on Computer Supported Co-operative Work, Conference Companion, Chicago, IL, USA. November 6-10, 2004

23. Instructional Skills Workshop. University of Calgary Teaching and Learning Centre. November 2007.

Submitted Patents

24. Frédéric D. Vernier, Chia Shen, and Mark S. Hancock. CoR²Ds: Context-rooted rotatable draggables, 2004.