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Curriculum Vitae

Marta A. Kersten

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Education and Degrees

In January 2007, I began my Ph.D. in Computer Science at the Centre for Intelligent Machines, at McGill University, Montreal, Canada.

M.Sc. Computer Science, School of Computing, Queen's University, Kingston, Canada.

I have completed my Master's thesis in the Medical Computing Lab under the supervision of Dr. Randy Ellis and Dr. James Stewart. The thesis work involved studying perceptual cues that help enhance shape and depth information of medical images. I studied the use of stereopsis and aerial perspective as depth cues in the human perception of volume–rendered images, and specifically simulated X-ray images. Two experiments and one preliminary study were conducted to evaluate the effectiveness of stereopsis and simulated aerial perspective on the depth perception of X-ray images. The results of these experiments suggest that both stereopsis and simulated aerial perspective can improve relative depth perception in purely absorptive media. These results provide new ways to visualize complex volumetric data and to explore the capabilities of the human visual system.

B.Sc. Honours Computing and Information Science, Faculty of Arts and Science, Queen's University, Kingston, Canada, 2002.

B.A. Minor Art History, Faculty of Arts and Science, Queen's University, Kingston, Canada. 2002.

Bilingual Education Certificate, Extended French Program, Lisgar Collegiate Institute, Ottawa, 1997.

Employment

Jan. 07 – May 07 Teaching Assistant 2nd year Introduction to Computing, School of Computer Science, McGill Univerity, Montreal.

Oct. 06 – Dec. 07 Research Assistant, Wilhelm Schickard Institut für Informatik Graphisch-Interaktive Systeme, University of Tuebingen, Tuebingen Germany.

I developed software for medical image registration. In particular, the focus of my work is the registration of three dimensional rotational angiography to CT or MRI.

June 05 – Sept. 05 Research Assistant, School of Management, University of Ottawa, Ottawa.

May 02 – Jan 03 Research Assistant, School of Management, University of Ottawa, Ottawa.

I worked on the interface design and implementation of a Palm-based mobile device application for the triage of children in emergency rooms. For more information please see: http://www.mobiledss.uottawa.ca/

Sept 01 – Dec 01: Teaching Assistant 3rd year Software Architecture, School of Computing, Queen's University, Kingston.

May 01 – Sept 01: Research Assistant, Medical Computing Lab, Queen's University, Kingston.
Co-designed and developed a program for aiding in the visualization of complex rotations of bone fragments. Code written in C++ using VTK and QT toolkits. For more information please see: http://www.cs.queensu.ca/medlab/motion/

Jan 01 – May 01: Teaching Assistant 2nd year Software Architecture course, School of Computing, Queen's University, Kingston.

June 99 – Aug 99: Camp counsellor, Jack Purcell Community Center, Ottawa.
Worked with children between ages of 5 and 12.

May 99 – June 99: Assistant, Activa Physiotherapy, Ottawa.
Set up patients on machines and gave treatments such as ultrasounds.

Honours and Awards

Canadian Graduate Scholarship Award ($35,000 x 3 years), 2007-2010.

Ontario Graduate Scholarship Award ($15,000), 2004.

First Class Graduate, 2002.

Dean's Honour List, 2002.

NSERC Undergraduate Student Research Award ($4000 + $2000). May 2001.

Ontario Scholar, 1997.

Bilingual Education Certificate, Extended French Program, 1997.

Positions

May 04 – Sept 04: Student Representative on the Promotions, Renewal, Tenure departmental committee. School of Computing, Queen's University.

Sept 03 – *Sept 04*: Graduate Coordinating Representative, School of Computing Queen's University.
Responsible for organizing extra curricular events for graduate students, staff and faculty.

Sept 03 – Jan 04: Graduate Committee Representative, School of Computing Queen's University.
Represented graduate students at departmental meetings.

Publications

Articles in refereed journals and conference proceedings

Sz. Wilk, W. Michalowski, K. Farion, and M. Kersten, "Interaction Design for Mobile Clinical

Decision Support Systems: the MET System Solutions.", *Foundations of Computing and Decision Sciences*, 32(1):47–62, 2007.

W. Michalowski, M. Kersten, S. Wilk, and R. Slowinksi, "Designing man-machine interactions for mobile clinical systems: MET triage support using palm handhelds." *European Journal of Operational Research*, 177(3):1409–1417, March 2007.

M. Kersten, J. Stewart, N. Troje, and R. Ellis, "Depth Perception in Translucent Volumes". *IEEE Transactions on Visualization and Computer Graphics*, 12(6):1117–1123, September/October, 2006.

J. Inoue, M. Kersten, B. Ma, J. Stewart, J. Rudan and R. Ellis, "Fast assessment of acetabular coverage using stereoscopic volume rendering." *Medicine Meets Virtual Reality (MMVR)*, January 2006.

G.E. Kersten and M.A. Kersten, "E-negotiation engineering and a reference model." *Proceedings of the Fifth International Conference on Electronic Commerce Research (ICECR-5)*, Montreal, Oct. 23–27, 2002 (CD ROM).

Presentations

M. Kersten, J. Hoffmann, D. Freudenstein, M. Tatagiba, U. Ernemann, D. Bartz. "Registration of 3D rotational angiography to CT (or MR) angiography." *Proceedings of the Deutschen Gesellshaft für Computer- und Roboterassisierte Chirugie (CURAC)*, Hannover, Oct. 12 –14, 2006.

M. Kersten, W. Michalowski, and S. Wilk. "Interaction Design in a Mobile Clinical Decision Support System: The Met System Example." *INFORMS Annual Meeting*, San Francisco, Nov. 13–16, 2005.

W. Michalowski, M. Kersten, Sz. Wilk, and R. Slowinski. "Designing man-machine Interactions for Mobile Clinical Systems: MET Triage Support using Palm Handhelds" The *14th Mini EURO Conference on Human Centered Processes*, Luxembourg, May 2003.

Dissertation

M. Kersten. "Stereoscopic volume rendering of medical images." Master's Thesis. School of Computing, Queen's University, Kingston, Canada, Aug. 2005.

Skills

Computer languages: *C++, Java, Python, VTK, Qt, Windows Development Environment, Mac OS, Windows 95/98/NT/2000/XP, Unix, OpenGL, UML, HTML, Matlab.*

Human languages: Fluent in English, Polish, French. Conversational German.

Interests

I enjoy traveling and experiencing the diversity of cultures. I lived in Austria in 1997 and have traveled extensively in Europe, Japan, and India.

I love the outdoors and playing in the mountains, in the forest, on snow or in the water. I've been skiing since I was three and I competed in freestyle skiing (on the NCD Freestyle team) at a provincial and national level. I also coached the NCD Team and children in Owen's Corning Bump League in Acro Skiing. I try to get out hiking, skiing, playing squash or tennis, climbing or anything active as often as possible.