

Curriculum Vitae

Andriy Pavlovych

Andriy Pavlovych
University of Saskatchewan
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Research Interests

- Human Computer Interaction
 - Human Performance in HCI
 - Investigated the effects of latency, dropouts, spatial and time jitter on pointing and target-following performance
 - Text Entry
 - Designed a novel multiple-press technique for entering text on mobile phones
 - Developed a model for predicting novice text entry performance on 12-key keypads
 - Collaborative Interfaces
 - Built MULTI, an interactive tabletop and wall system, which supports co-located collaboration via laser pointers and touch
 - Participated in developing CoViD, a system for collaborative virtual 3D design
- High Dynamic Range Imaging
 - Build a prototype of a high dynamic range *projection* system
 - Demonstrated a window manager for HDR displays which improves the visibility of the UI elements in a presence of the HDR content
- Computer Networks
 - Course director for two undergraduate courses in computer networking
- Virtual Reality
 - Developed and built the hardware for Hedgehog, an optical 3D tracking device

Education and Research Experience

- 2011–2012 **Postdoctoral Researcher**
Human-Computer Interaction Lab, Department of Computer Science, University of Saskatchewan (Saskatoon, Saskatchewan)
Advisor: Carl Gutwin.
- Conducting research on the effects of latency in collaborative environments.
 - Developing hardware to facilitate collaboration on interactive tabletops.
 - Developing a new framework for pointing task information capacity.
 - Investigating novel text entry methods.
- 2011 **Ph.D. in Computer Science**
Department of Computer Science, York University (Toronto, Ontario)
Advisor: Wolfgang Stuerzlinger.
Dissertation title: *Latency, Jitter and Dropouts in Human Pointing Performance.*

- 2003 **M.Sc. in Computer Science**
Department of Computer Science, York University (Toronto, Ontario)
 Advisor: Wolfgang Stuerzlinger.
 Thesis title: *Text Entry on 12-Button Keypads: Techniques and Models.*
- 2001 **B.Sc. in Computer Science**
 Specialized Honours program in Computer Science
- Graduated first class with distinction.
 - Member of Dean's Honour Roll (2000).
 - Grade Point Average: 8.3 out of 9.0 possible.
- 1994–1997 **Undergraduate Program in Computing Technologies**
Department of Physics, Chernivtsi National University (Chernivtsi, Ukraine)
- Transferred to Computer Science program at York.
- 1994 **Secondary School Diploma**
Secondary School #24 (Chernivtsi, Ukraine)
- Graduated with distinction.
 - Winner of the regional Physics contest (1994).
 - Winner of the regional Mathematics contest (1992).

Teaching Experience

- 2011 **Course Director, 3rd year Communication Networks**
Department of Computer Science and Engineering, York University, Toronto, ON
- Course is an introduction to communications and networking
 - Protocol hierarchies; the OSI model
 - Fundamental limits due to Shannon and Nyquist
 - Encoding of analogue/digital data as analogue/digital signals
 - Data link protocols; error and flow control
 - Medium access; Ethernet and token passing systems in LANs
- 2009–2011 **Instructor, Game Programming Advanced Diploma program**
School of Media Studies & Information Technology, Humber College, Toronto, ON
- Computer Graphics, Introduction to using OpenGL, Direct3D, shaders.
 - Math for game development. Matrices, linear equations, rotations, quaternions.
 - Line-surface intersections, computational curves and surfaces.
- 2009 **Course Director, 3rd year Computer Network Protocols and Applications**
Department of Computer Science and Engineering, York University, Toronto, ON
- Course on the higher-level network protocols, security issues, network programming, and applications.
 - Sockets and Socket Programming
 - Network Layer Protocols, including ICMP, DHCP, and ARP Multicasting
 - Transport Layer, UDP, and TCP
 - Application Layer Protocols, including HTTP and DNS
 - Multimedia, Security, VOIP.

- 2004 **Course Director, 4th year Computer Graphics**
Department of Computer Science, York University, Toronto, ON
- Teaching practicum, as a requirement of a PhD program.
 - Introduction to Computer Graphics course
- 2000–2009 **Teaching Assistant**
Department of Computer Science, York University, Toronto, ON
 Assisted for the following courses: User Interfaces, Introduction to the Theory of Computation, Fundamentals of Data Structures, Introduction to Computer Use and others.
- Grading students' assignments, projects, and exams.
 - Holding tutorials and office hours to answer students' questions.
 - Monitoring lab sessions.

Publications in Journals and Refereed Conference Proceedings

1. Pavlovych, A. and Gutwin, C. (2012). Assessing Target Acquisition and Tracking Performance for Moving Targets in the Presence of Latency and Jitter, *Graphics Interface 2012*, to appear.
2. Pavlovych, A. and Stuerzlinger, W. (2011). Target Following Performance in the Presence of Latency, Jitter, and Signal Dropouts, *Graphics Interface 2011*, 33-40.
3. Pavlovych, A. and Stuerzlinger, W. (2009). The Tradeoff between Spatial Jitter and Latency in Pointing Tasks, *ACM Symposium on Engineering Interactive Computing Systems*, 187-196.
4. Teather, R., Pavlovych, A., Stuerzlinger, W., and MacKenzie, S. (2009). Effects of tracking technology, latency, and spatial jitter on object movement, *IEEE Symposium on 3D User Interfaces*, 43-50.
5. Pavlovych, A. and Stuerzlinger, W. (2008). Effect of screen configuration and interaction devices in shared display groupware. In *Proceeding of the 3rd ACM international Workshop on Human-Centered Computing* (Vancouver, British Columbia, Canada, October 31 - 31, 2008). HCC '08. ACM, New York, NY, 49-56.
6. Stuerzlinger, W., Zaman, L., Pavlovych, A., and Oh, J. (2006). The design and realization of CoViD: a system for collaborative virtual 3D design. *Virtual Real.* 10, 2 (Sep. 2006), 135-147.
7. Pavlovych, A., & Stuerzlinger, W. (2005). A High-Dynamic Range Projection System, *Photonic Applications in Biosensing and Imaging*, Eds. Warren C. W. Chan, Kui Yu, Ulrich J. Krull, Richard I. Hornsey, Brian C. Wilson, Proceedings of SPIE Vol. 5969.
8. Pavlovych, A., & Stuerzlinger, W. (2005). An Analysis of Novice Text Entry Performance on Large Interactive Wall Surfaces, *Proceedings of HCI International 2005*, Lawrence Erlbaum, CD-ROM, July 2005.
9. Pavlovych, A., & Stuerzlinger, W. (2004). Model for non-Expert Text Entry Speed on 12-Button Phone Keypads. *Proceedings of the ACM Conference on Human Factors in Computing Systems – CHI 2004*, 351-358.
10. Pavlovych, A., & Stuerzlinger, W. (2004). Laser Pointers as Interaction Devices for Collaborative Pervasive Computing. *Advances in Pervasive Computing*, 315-320.
11. Pavlovych, A., & Stuerzlinger, W. (2003). Less-Tap: A Fast and Easy-to-learn Text Input Technique for Phones. *Graphics Interface 2003*, 97-104.
12. Pavlovych, A., & Stuerzlinger, W. (2003). Modeling non-Expert Text Entry Speed on 12-Button Phone Keypads. Short Paper and poster presented at *UIST 2003*.

Other Publications

1. Teather, R., Pavlovych, A. & Stuerzlinger, W. (2009). Effects of Tracking Technology, Latency, and Spatial Jitter on Object Movement, Poster at *IEEE VR 2009*, Feb. 2009.
2. Pavlovych, A. & Stuerzlinger, W. (2008). Effect of Group Size and Interaction Devices in Co-Located Computer Supported Collaborative Work, Poster at *Graphics Interface 2008*, May 2008.
3. A. Pavlovych, A. Vorozcovs, & W. Stuerzlinger (2005). A Window Manager for High Dynamic Range Display Systems, Workshop on Emerging Display Technologies at *IEEE VR 2005*.
4. A. Pavlovych (2003). Text Entry on 12-Button Keypads: Techniques and Models. MSc Thesis.
5. A. Pavlovych (2001). Using Sound Localization in Robot's navigation. Course Project.

Scholarships and Awards

Ontario Graduate Scholarship, 2004-2005, 2005-2006, 2006-2007, 2007-2008.
General Motors of Canada Bursary, 2004.

References

- Carl Gutwin, Professor, Director of the HCI lab, Department of Computer Science, University of Saskatchewan.
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- Wolfgang Stuerzlinger, Professor, Department of Computer Science and Engineering, York University.
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- Scott MacKenzie, Associate Professor, Department of Computer Science and Engineering, York University.
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- Robert Allison, Associate Professor, Department of Computer Science and Engineering, York University.
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Hobbies

Electronics, photography, cycling.