

## Timothy E. Halverson

Performance and Learning Models (PALM) Team

Air Force Research Laboratory Mesa, AZ

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### **EDUCATION**

Ph.D., Computer and Information Science, December 2008

University of Oregon

Dissertation topic: “An ‘Active Vision’ Computational Model of Visual Search for Human-Computer Interaction”

Advisor: [Dr. Anthony J. Hornof](#)

Committee: [Dr. Art Farley](#), [Dr. Stuart Faulk](#), [Dr. Ed Vogel](#), [Dr. Michal Young](#)

M.S., Computer and Information Science, December 2003

University of Oregon

Major area of study: Human-Computer Interaction

B.S., Computer and Information Science, Minor: Cognitive Psychology, June 2001

University of Oregon

Summa Cum Laude

### **POSTDOCTORAL TRAINING**

Postdoctoral fellow – April 2009-present

Performance and Learning Models (PALM) Team

Air Force Research Laboratory

Conducted research focused on modeling the affects of fatigue on cognition.

Mentored by Dr. Glenn Gunzelmann.

Adjunct Research Associate – January-April 2009

Cognitive Modeling and Eye Tracking Lab

University of Oregon

Conducted research on the affects of multitasking and auditory feedback on visual processes. Supervised graduate and undergraduate projects.

Mentored by Dr. Anthony Hornof.

### **JOURNAL ARTICLES**

Halverson, T. & Hornof, A. J. (to appear). An “active vision” computational model of visual search for human-computer interaction. Accepted to the journal *Human-Computer Interaction* on August 20th, 2009.

Hornof, A. J., & Halverson, T. (2002). Cleaning up systematic error in eye tracking data by using required fixation locations. *Behavior Research Methods, Instruments, and Computers*, 34(4), 592-604.

## REFEREED CONFERENCE PUBLICATIONS

### Full Papers

Halverson, T., Gunzelmann, G., Moore Jr., L. R., & Van Dongen, H. P. A. (2010). Modeling the effects of work shift on learning in a mental orientation and rotation task. In D. D. Salvucci & G. Gunzelmann (Eds.), *Proceedings of the 10th International Conference on Cognitive Modeling* (pp. 79-84). Philadelphia, PA: Drexel University.

Hornof, A. J., Zhang, Y., & Halverson, T. (2010). Knowing where and when to look in a complex time-critical dual task. *Proceedings of the Conference on Human Factors in Computing Systems*, Atlanta, GA, April 10-15. [Best paper nominee]

Hornof, A. J., Halverson, T., Isaacson, A., & Brown, Erik (2008). Transforming Object Locations on a 2D Visual Display Into Cued Locations in 3D Auditory Space. *Proceedings of the Human Factors and Ergonomics Society 52nd Annual Meeting*, New York, 1170-1174.

Halverson, T., & Hornof, A. J. (2004a). Explaining eye movements in the visual search of varying density layouts. *Proceedings of the Sixth International Conference on Cognitive Modeling*, Pittsburgh, Pennsylvania, July 30-August 1, 124-129. [33% acceptance rate]

Halverson, T., & Hornof, A. J. (2004b). Local density guides visual search: Sparse groups are first and faster. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting*, New Orleans, LA, September 20-24, 1860-1864.

Halverson, T., & Hornof, A. J. (2004c). Strategy shifts in mixed-density search. *Proceedings of the 26th Annual Meeting of the Cognitive Science Society*, Chicago, IL, August 4-8, 529-534. [31% acceptance rate]

Hornof, A. J., & Halverson, T. (2003). Cognitive strategies and eye movements for searching hierarchical computer displays. *Proceedings of ACM CHI 2003: Conference on Human Factors in Computing Systems*, Ft. Lauderdale, FL, April 5-10, 249-156. [16% acceptance rate]

### Short Papers and Posters

Halverson, T., Gunzelmann, G., Moore Jr., L. R., & Van Dongen, H. P. A. (2010). The effects of work shift and strategy on an orientation task. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 2134-2139). Austin, TX: Cognitive Science Society.

Halverson, T., & Hornof, A. J. (2008). The effects of semantic grouping on visual search. *Proceedings of ACM CHI 2008: Conference on Human Factors in Computing Systems*, Florence, Italy, April 5-10, 3471-3476.

Halverson, T. (2007). Towards a flexible, reusable model for predicting eye movements during visual search of computer screens: Investigating the effects of Grouping. Presented at the Doctoral Consortium of the *Eighth International Conference on Cognitive Modeling*, Ann Arbor, Michigan, July 26-29.

Halverson, T., & Hornof, A. J. (2007). A minimal model for predicting visual search in Human-Computer Interaction. *Proceedings of ACM CHI 2007: Conference on Human Factors in Computing Systems*, San Jose, CA, April 28-May 3, 431-434.

Hornof, A. J., Rogers, T., & Halverson, T. (2007). EyeMusic: Performing live music and multimedia compositions with eye movements. *NIME 2007: Conference on New Interfaces for Musical Expression*, 299-300.

Halverson, T., & Hornof, A. J. (2006). Towards a flexible, reusable model for predicting eye movements during visual search of text. *Proceedings of the 28th Annual Meeting of the Cognitive Science Society*, Vancouver, BC, Canada, July 26-29.

Brock, D., McClimens, B., Hornof, A. J., & Halverson, T. (2006). Cognitive models of the effect of audio cueing on attentional shifts in a complex multimodal dual-display dual-task. *Proceedings of the 28th Annual Meeting of the Cognitive Science Society*, Vancouver, BC, Canada, July 26-29.

Halverson, T. (2006). Integrating models of human-computer visual interaction. Doctoral Consortium paper, poster, and talk. *ACM CHI 2006: Conference on Human Factors in Computing Systems*, Montréal, Québec, April 22-27. [17% acceptance rate]

Halverson, T., & Hornof, A. J. (2004d). Link colors guide a search. *ACM CHI 2004: Conference on Human Factors in Computing Systems*, Vienna, Austria, April 24-29, 1367-1370. [29% acceptance rate]

Hornof, A. J., & Halverson, T. (2003). Predicting cognitive strategies and eye movements in hierarchical visual search. *Proceedings of the Fifth International Conference on Cognitive Modeling*, Bamberg, Germany, April 10-12, 261-262.

Hornof, A. J., & Halverson, T. (2003). Predicting cognitive strategies and eye movements in hierarchical visual search. *Proceedings of the 25th Annual Meeting of the Cognitive Science Society*, Boston, MA, July 31-August 2.

## **TEACHING EXPERIENCE**

Graduate Teaching Assistant, University of Oregon  
CIS 451/551 "Database Processing" – Winter 2002, Spring 2002, Fall 2002

## **AWARDS**

2009-2010 Oak Ridge Research Institute of Science and Education (ORISE)  
Fellowship

2007-2008 University of Oregon Henry V. Howe Scholarship

## **PROFESSIONAL EXPERIENCE**

Lab Manager, September 2006-2008  
University of Oregon

Research Assistant, 2001-2008  
University of Oregon

Technical Manager and Computer Repair Technician, 1993-2000  
Galaxy Hardware Publishing, Eugene, OR  
MicroDoc, Eugene, OR

Automatic Tracking Radar Specialist, 1989-1993  
United States Air Force

## **SERVICE**

ACM CHI: Conference on Human Factors in Computing Systems  
Associate Chair Work-in-progress 2010

Annual Meeting of the Cognitive Science Society  
Tutorials and workshops committee 2010

Chapter president of Upsilon Pi Epsilon at the University of Oregon, 2007-2008

## **REVIEWING (refereeing)**

ACM CHI: Conference on Human Factors in Computing Systems, 2007-2010

Annual Meeting of the Cognitive Science Society, 2010

Behavior & Information Technology Journal, 2010

Behavior Representation in Modeling & Simulation (BRIMS) Conference, 2010

International Conference on Cognitive Modeling (ICCM), 2010

SLEEP, the official journal of the Associated Professional Sleep Societies, 2010

## **PROFESSIONAL AND ACADEMIC SOCIETIES AND ORGANIZATIONS**

Association of Computer Machinery (ACM)

ACM Special Interest Group on Human-Computer Interaction (ACM SIGCHI)

Human Factors and Ergonomics Society (HFES)

HFES Human Performance Modeling Technical Group (HFES HPM-TG)

Cognitive Science Society

Upsilon Pi Epsilon

## **REFERENCES**

Dr. Anthony J. Hornof

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University of Oregon

Email: [hornof@cs.uoregon.edu](mailto:hornof@cs.uoregon.edu)

Dr. David E. Kieras

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University of Michigan

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Dr. Glenn Gunzelmann

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