

MARC POMPLUN

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RESEARCH INTERESTS

Visual Cognition: eye movements, visual attention, perception of real-world scenes

Computational Modeling: models of visual attention, biologically inspired vision algorithms

EDUCATION

Bielefeld University, Bielefeld, Germany 01/1995 – 06/1998

Ph.D. in Computer Science

Advisor: Prof. Dr. Helge Ritter

Dissertation: Analysis and Models of Eye Movements in Comparative Visual Search.

Graduated with distinction and Best Dissertation at Bielefeld University Award in 1998

Bielefeld University, Bielefeld, Germany 10/1990 – 12/1994

M.S. (Diplom) in Computer Science

Advisors: Prof. Dr. Helge Ritter, Prof. Dr. Boris Velichkovsky

Master's thesis: Distribution of Attention in Ambiguous Images

PROFESSIONAL EXPERIENCE

University of Massachusetts Boston, Boston, MA 09/2007 - present

Associate Professor of Computer Science

Boston University, Boston, MA 09/2007 - present

Adjunct Associate Professor of Cognitive and Neural Systems

New York University, New York City, NY Visiting Scholar during sabbatical	06/2007 – 08/2008
Boston University, Boston, MA Adjunct Assistant Professor of Cognitive and Neural Systems	12/2003 – 08/2007
University of Massachusetts Boston, Boston, MA Assistant Professor of Computer Science Promoted to tenured Associate Professor in 09/2007 with rating “excellent” in research, teaching, and service.	01/2002 – 08/2007
York University, Toronto, Canada Research Scientist in the Department of Computer Science and the Centre for Vision Research Advisor: Prof. John Tsotsos	09/2000 – 12/2001
University of Toronto, Toronto, Canada Post-Doctoral Fellow in the Department of Psychology Advisor: Prof. Eyal Reingold	07/1998 – 08/2000

SELECTED HONORS AND AWARDS

PAST AND CURRENT

Best Dissertation at Bielefeld University Award Financial award: approximately \$2,000	1998
Post-Doctoral Research Award Sponsor: Deutsche Forschungsgemeinschaft (DFG) Funds: approximately \$78,000	10/1998 – 09/2000
Outstanding Achievement Award for Research Awarded by the College of Science and Mathematics at UMass Boston Single recipient chosen from more than 100 active researchers in the college	2007
Grant from private company: SR Research, Mississauga, Canada Role: PI Grant title: Algorithm development for the EyeLink Eye Tracking System Funds: \$70,200	06/2003 -08/2010

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- Grant from the US Department of Education** 09/2004 – 08/2009
Role: Co-PI (PI: Peter Fejer)
Grant title: GAANN (Graduate Assistance in Areas of National Need)
Grant number: P200A040140
Funds: \$585,840
- Grant from NIH/National Eye Institute** 08/2007 – 07/2009
Role: PI (no Co-PIs)
Grant title: A General Model of Saccadic Selectivity in Visual Search
Grant number: R15 EY017988
Funds: \$209,463
- Grant from NIH/National Eye Institute** 04/2010 - 03/2012
Role: PI (no Co-PIs)
Grant Title: The Remapping of Visual-Perceptual Space by Saccadic Adaptation
Grant number: R21 EY019545
Funds: \$281,920
- Grant from NSF** 09/2011 - 08/2014
Role: Co-PI (PI: Matthew Schneps, Harvard-Smithsonian Center for Astrophysics)
Grant Title: Investigating a Framework for STEM-Reading to Support
Secondary School Students with Reading Disabilities
Grant number: HRD-1131039
Funds: \$286,000
- Grant from NIH/National Eye Institute** 12/2011 - 11/2014
Role: PI (no Co-PIs)
Grant Title: Semantic Guidance of Visual Attention
Grant number: R01 EY021802
Funds: \$668,663

Currently pending: Three grant proposals to NIH and one proposal to NSF.

TEACHING

COURSES TAUGHT AT UMASS BOSTON

Fall 2011: CS 320 “Applied Discrete Mathematics”

Spring 2011: CS 320 “Applied Discrete Mathematics”

- CS 675 “Computer Vision”
- Fall 2010:** CS 320 “Applied Discrete Mathematics”
CS 672 “Neural Networks”
- Spring 2010:** CS 320 “Applied Discrete Mathematics”
- Fall 2009:** CS L271 “Introduction to Cognitive Science” (entire course)
CS 620 “Theory of Computation”
- Spring 2009:** CS 672 “Neural Networks”
- Fall 2008:** CS L271 “Introduction to Cognitive Science” (team-taught with Dr. Blaser, Psychology)
- Spring 2008:** Sabbatical
- Fall 2007:** CS 675 “Computer Vision”
- Spring 2007:** CS L271 “Introduction to Cognitive Science” (team-taught with Dr. Blaser, Psychology)
CS 320 “Applied Discrete Mathematics”
CS 670 “Introduction to Artificial Intelligence”
- Fall 2006:** CS 320 “Applied Discrete Mathematics”
CS 620 “Theory of Computation”
- Spring 2006:** CS L271 “Introduction to Cognitive Science” (team-taught with Dr. Kaldy, Psychology)
CS 670 “Introduction to Artificial Intelligence”
- Fall 2005:** CS 620 “Theory of Computation”
- Spring 2005:** CS L271 “Introduction to Cognitive Science” (team-taught with Dr. Kaldy, Psychology)
CS 670 “Introduction to Artificial Intelligence”
CS 675 “Computer Vision”
- Fall 2004:** CS 620 “Theory of Computation”
- Spring 2004:** CS 410 “Introduction to Software Engineering”
CS 670 “Introduction to Artificial Intelligence”
- Fall 2003:** CS 620 “Theory of Computation”
- Spring 2003:** CS 320 “Applied Discrete Mathematics”
CS 670 “Introduction to Artificial Intelligence”
- Fall 2002:** CS 410 “Introduction to Software Engineering”

Spring 2002: CS 320 “Applied Discrete Mathematics”

Throughout: A total of 12 independent study courses related to ongoing research projects.

COURSE TAUGHT AT YORK UNIVERSITY, TORONTO, CANADA

Spring 2001: COSC 2001 “Introduction to the Theory of Computation”

COURSES TAUGHT AT BIELEFELD UNIVERSITY, BIELEFELD, GERMANY

Summer 1997: Modeling Eye Movements Using an Active Camera System II (one-year graduate lab course).

Winter 1996/1997: Modeling Eye Movements Using an Active Camera System I (one-year graduate lab course).

Winter 1995/1996: Modeling Basic Perceptual and Cognitive Processes (graduate seminar)

Summer 1995: Computer Science and Psychology (undergraduate seminar)

Winter 1994/1995: Implementation of Elementary Algorithms (undergraduate seminar)

TEACHING ASSISTANCE AT BIELEFELD UNIVERSITY, BIELEFELD, GERMANY

Summer 1994: Introduction to Neural Computation (graduate course)

Winter 1993/1994: Artificial Intelligence I (graduate course)

Summer 1993: Software Engineering (undergraduate lab course)

NEW COURSES DEVELOPED AND TAUGHT AT UMASS BOSTON

CS675 “Computer Vision”

CS672 “Neural Networks” (redevelopment)

CSL271 “Introduction to Cognitive Science,” cross-listed as PSYCH L271

MENTORING

POST-DOCTORAL FELLOWS ADVISED

Dr. Elena Carbone 08/2003 - 03/2004

Project: A Neural Model for Simulating the Fröhlich Misperception Effect.

Dr. Carbone is now on faculty at Bielefeld University, Germany

Dr. Seok-Woo Jang 10/2002 - 04/2003

Project: Adaptive Estimation of Motion Patterns in Image Sequences

Dr. Jang is now on faculty at Soongsil University, Seoul, South Korea

PH.D. STUDENTS ADVISED

Farahnaz Ahmed-Wick 06/2010 - present

Project: Remapping of Visual-Perceptual Space by Post-Saccadic Error

Nada Attar 09/2010 - present

Project: Designing Computer Displays for Dyslexic Users

Nick Wang 01/2008 - present

Projects: Semantic Guidance of Visual Attention,
Attentional Capture by Texts in Real-World Scenes

Alex Hwang 01/2005 – 12/2009

Projects: Modeling the Feature Selectivity of Eye Movements during Search
Semantic Influences on Visual Search in Natural Images

Thesis: “Modeling the Control of Attention by Visual and Semantic
Factors in Real-World Scenes”

Alex Hwang is currently a Post-Doctoral Fellow at the Schepens Eye Research
Institute at Harvard University.

Tyler Garaas 09/2005 – 05/2009

Projects: Whole-Field Saccadic Adaptation and Perceptual Space
Peri-Saccadic Perceptual Mislocalization of Objects
The Inspection Time Paradigm and Cortical Plasticity
A Biologically Inspired Active Robot Vision System
Visual Attention in the Depth Dimension

Thesis: “Real-Time Active Robotic Vision using Biologically Inspired
Neural Models”

Tyler Garaas is currently a Research Scientist at the Mitsubishi Electric
Research Laboratories (MERL) in Cambridge, MA.

Mei Xiao 09/2003 – 02/2008
 Projects: Adaptive Gaze-Controlled Human-Computer Interaction
 The Effect of Audio-Visual Perceptual Integration on Eye Movements
 Thesis: “Eye-Movement Analysis for Advanced Human-Computer Interaction”
 Mei Xiao is currently a Post-Doctoral Fellow at the Sun Center of Excellence
 for Visual Genomics at the University of Calgary, Canada.

M.S. STUDENTS ADVISED

Hiroshi Nohmi: Software for the Airborne FMCW Synthetic Aperture Radar 09/2008 – 08/2009
Frank Marino: Neural Modeling of Dendritic Computation 12/2007 – 06/2009
Andreas Lennartz: Algorithmic Target Inference During Visual Search 04/2006 – 02/2007
May Wong: The Effect of Sound on Smooth Pursuit Eye Movements 09/2006 – 08/2007
Heri Mariwa: Piecewise Mental Rotation 09/2005 – 08/2006
Shantanu Inamdar: Interaction between Eye Movement and Working Memory 01/2003 – 05/2005
Yan Zhang: A Gaze-Controlled Active Vision System 03/2002 – 06/2003
Naing Maw: Studying Face Recognition in Gaze-Contingent Displays 03/2002 – 06/2003

HONORS AND MCNAIR PROGRAM STUDENTS ADVISED

Henry Lo: Feature Weighting in Retinal Visual Error Computation 09/2008 – 12/2010
Judelande Hyppolite: The Eye-Hand Span in Human-Computer Interaction 09/2003 – 05/2004
Sindhura Sunkara: Measuring Cognitive Workload in HCI 09/2002 – 06/2003

OTHER UNDERGRADUATE STUDENTS ADVISED

A total of 15 undergraduate students, most of whom published a conference or journal paper. Eight of these students were awarded undergraduate research funding by UMass Boston.

SERVICE TO THE PROFESSION

REVIEWER FOR THE FOLLOWING JOURNALS:

- International Journal of Computer Vision
- IEEE Transactions on Robotics
- IEEE Transactions on Biomedical Engineering
- IEEE Transactions on Vehicular Technology
- Attention, Perception & Psychophysics
- Journal of Experimental Psychology
- Current Biology
- Consciousness and Cognition
- Quarterly Journal of Experimental Psychology
- Neural Networks
- Image and Vision Computing
- Journal of Vision
- Vision Research
- Biological Cybernetics
- Journal of Virtual Reality and Broadcasting
- Behavior Research Methods
- Computer Vision and Image Understanding
- Journal of Engineering and Computer Innovations

EDITORIAL BOARD MEMBER:

- Frontiers in Perception Science

CO-CHAIR, WORKSHOPS CHAIR, AND SPECIAL TRACK CHAIR FOR THE FOLLOWING CONFERENCE:

- Fifth International Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2010), Boston, MA

WORKSHOP CHAIR FOR THE FOLLOWING CONFERENCE:

- Sixth International Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2011), York, UK.

PROGRAM COMMITTEE MEMBER FOR THE FOLLOWING CONFERENCES:

- Eye Tracking Research and Applications (ETRA 2012)
- 2nd International Conference on Bioinformatics and Computational Biology (BICoB 2011)
- Sixth International Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2011)
- Fifth International Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2010)
- Eye Tracking Research and Applications (ETRA 2010)
- Annual Meeting of the Cognitive Science Society (CogSci 2009)
- Eye Tracking Research and Applications (ETRA 2008)
- International Workshop on Attention in Cognitive Systems (WAPCV 2008)
- Eye Tracking Research and Applications (ETRA 2006)
- Annual Meeting of the Cognitive Science Society (CogSci 2005)

REFeree FOR THE FOLLOWING CONFERENCES:

- 2011 IEEE IVMSp (Image, Video, and Multidimensional Signal Processing Technical Committee)
- Annual Meeting of the Cognitive Science Society (CogSci 2008)
- Annual Meeting of the Cognitive Science Society (CogSci 2007)
- Annual Meeting of the Cognitive Science Society (CogSci 2006)
- Annual Meeting of the Cognitive Science Society (CogSci 2004)
- Annual Meeting of the Cognitive Science Society (CogSci 2003)
- International Joint Conference on Artificial Intelligence (IJCAI 2001)

OTHER REVIEWING SERVICE:

- NSF grant proposal reviewer
- NASA grant proposal reviewer
- Proposal reviewer for the Netherlands Organization for Scientific Research
- Proposal reviewer for the City University of Hong Kong
- Book reviewer for Lawrence Erlbaum Publishers
- Book reviewer for John Wiley & Sons
- Book reviewer for Franklin, Beedle & Associates

- Book reviewer for Cengage Learning
- Book reviewer for MIT Press
- Book reviewer for SAGE Publications

PH.D. COMMITTEE MEMBER FOR THE FOLLOWING STUDENTS:

- **Saaïd Baraty**, Department of Computer Science, UMass Boston, since 2010.
- **Anya Potter**, Department of Psychology, UMass Boston, 2010-2011.
- **Paskorn Champrasert**, Department of Computer Science, UMass Boston, 2010-2011.
- **Chonho Lee**, Department of Computer Science, UMass Boston, in 2010.
- **Selim Mimaroglu**, Department of Computer Science, UMass Boston, in 2009.
- **Li Jie**, Department of Electrical and Computer Engineering, McGill University, in 2008.
- **Kai Essig**, Faculty of Technology, Bielefeld University, Bielefeld, Germany, in 2007.
- **Rick Butterworth**, Department of Computer Science, UMass Boston, in 2006.
- **Arash Fazl**, Department for Cognitive and Neural Systems, Boston University, in 2006.
- **Arthur Pearson**, Department of Psychology, UMass Boston, since 2005.
- **Duke Han**, Department of Psychology, UMass Boston, in 2004.
- **Hendrik Kösling**, Faculty of Technology, Bielefeld University, Bielefeld, Germany, in 2003.

COMMITTEE SERVICE AT UMASS BOSTON

- **Important Departmental Committees:**
 - Faculty Recruitment Committee (2002/2003, 2003/2004, 2006/2007, 2008/2009)
 - Staff Recruitment Committee (2004/2005, Chair: 2008/2009)
 - Personnel Committee (2004/2005, Chair: 2009/2010, 2011/2012)
 - AQUAD Steering Committee (2006/2007)
 - ABET Accreditation Committee (Chair: 2009-present)
- **University Committees:**
 - Faculty Council GenEd Distribution subcommittee (2006-2009)
 - UMass Boston Institutional Review Board (IRB) (2009-present)

- University Committee on Majors, Honors and Special Programs (MHSP) (2009-present)

OTHER SERVICE:

- Coach of the UMass Boston Team for the ACM International Programming Competition in 2005 and 2006
- Supervised science fair project of Shaneka Davis, South Boston High School: “How Easily can People Adapt to Gaze-Controlled Typing Interfaces?” in 2004.
- Supervisor of the UMass Boston Team for the Computer Society International Design Competition (CSIDC 2003)
- Faculty Advisor of the ACM Student Chapter at UMass Boston from 2002 to 2007
- Organizer of the TICS (“Talks in Cognitive Science”) Colloquium Series with speakers and audiences from the Boston area (<http://www.cs.umb.edu/~marc/tics/>) since 2002

CONSULTING

Paid Consultant for Harvard-Smithsonian Center for Astrophysics Project: “Computer Displays for Dyslexic Researchers” PI: Matthew Schneps, Laboratory for Visual Learning	08/2007 – present
Paid Consultant for Brigham and Women’s Hospital Project: “Alertness and Cognitive Performance in Sleep-Restricted Older People” PI: Jeanne Duffy, Division of Sleep Medicine	09/2005 – present
Paid Consultant for Brandeis University Project: “Imitation of Hand Movement Sequences” PI: Robert Sekuler, Department of Psychology	10/2006 – 10/2009

SELECTED INVITED TALKS (SINCE 2003)

Suffolk University, Department of Computer Science NSF REU Program Seminar Title of Talk: “Cognitive Load in Visual Tasks”	07/2011
Boston University, Department of Computer Science Department Seminar Title of Talk: “Semantic Guidance of Visual Attention”	03/2011

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- Harvard Medical School, Visual Attention Lab** 03/2010
Research Seminar
Title of Talk: "Towards a Multi-Level Computational Model of Attentional Guidance"
- State University of New York, College of Optometry** 04/2009
Schnurmacher Institute for Vision Research Seminar
Title of Talk: "Studying Human Vision using Gaze-Contingent Stimulus Presentation and Feature Analysis."
- Boston University, Department of Cognitive and Neural Systems** 03/2009
"Models of Visual Perception" Seminar
Title of Talk: "Modeling Visual Attention during Search & Calibration of Visuospatial Perception by Post-Saccadic Error"
- Boston University, Department of Computer Science** 02/2009
Department Seminar
Title of Talk: "Informativeness of Visual Feature Dimensions Controls Attention during Real-World Search"
- Rutgers University, Department of Cognitive Science** 03/2008
Perceptual Science Seminar
Title of Talk: "A Model of Top-Down Control of Attention during Visual Search in Real-World Scenes"
- New York University, Department of Psychology and Center for Neural Science** 07/2007
Perception and Attention Seminar
Title of Talk: "Feature Guidance in Visual Search"
- 13th Annual German-American Kavli Frontiers of Science symposium** 05/2007
Co-sponsored by the Humboldt Foundation and the U.S. National Academy of Sciences.
Attendees were selected by a committee of Academy members from among "distinguished young researchers across disciplines who had already made recognized contributions to science."
Title of Talk: "Selectivity of Eye Movements during Visual Search"
- Harvard University, Department of Psychology** 11/2006
Vision Lab Seminar
Title of Talk: "Saccadic Selectivity in Complex Visual Search Displays"
- Schepens Eye Research Institute, Boston** 03/2006
Research Colloquium
Title of Talk: "The Gaze-Contingent Display Paradigm"
- Brigham and Women's Hospital, Visual Attention Lab** 02/2006
Research Seminar
Title of Talk: "Saccadic Selectivity in Visual Search"

Boston University, Department of Cognitive and Neural Systems Research Seminar Title of Talk: "Feature Selectivity of Saccadic Eye Movements"	03/2005
Boston University, Department of Cognitive and Neural Systems Graduate Seminar on Models of Visual Perception Title of Talk: "Guidance of Visual Attention in Real-World Scenes"	03/2005
Boston University, Department of Cognitive and Neural Systems Graduate Seminar on Models of Visual Perception Title of Talk: "Modeling Eye Movements in Visual Search"	03/2005
Suffolk University, Department of Mathematics and Computer Science Department Seminar Title of Talk: "Building and Evaluating Gaze-Controlled Human-Computer Interfaces"	03/2005
US Air Force Workshop on Integrated Models of Cognitive Systems (IMoCS) in Saratoga Springs, New York Title of Talk: "Area Activation II: Predicting saccadic selectivity in visual search tasks."	03/2005
University of Lübeck, Germany, Institute for Neuro- and Bioinformatics Lunch Seminar Title of Talk: "Eye Movements as a Research Subject in Cognitive Science"	06/2004
"Eyes-Tea" Boston Area Eye-Movement Seminar Series Title of Talk: "The Gaze-Contingent Display Paradigm"	12/2003
Institute for Theoretical Physics and Mathematics in Tehran, Iran Presented ten invited talks during a two-week visit Topics: Eye-movement research and neural modeling of cognitive processes	08/2003
Biomedical Engineering Department, Boston University Brain and Vision Research Laboratory & Neurovisual Clinic Seminar Title of talk: "Attending to Motion: A Neural Model for Localizing and Labeling Simple Motion Patterns in Image Sequences"	04/2003
Boston University, Department of Cognitive and Neural Systems Graduate Seminar on Vision in Man, Monkey, and Machine Title of Talk: "Direct Measurement of the Visual Span"	03/2003

PUBLICATIONS

BOOKS AND BOOK CHAPTERS (9 published/to appear)

1. Pomplun, M. (undergraduate textbook to appear in 2013). *Hands-On Computer Vision*. Singapore: World Scientific Publishing.

2. Pomplun, M. & Suzuki, J. (edited book to appear in 2012). *Developing and Applying Biologically-Inspired Vision Systems: Interdisciplinary Concepts*. Hershey, Pennsylvania: IGI Global.
3. Garaas, T.W. & Pomplun, M. (2010). The visual implications of inspection time. In D. Zhang, Y. Wang, and W. Kinsner (Eds.), *Advances in Cognitive Informatics*. New York: Springer, pp. 62-71.
4. Pomplun, M. (2007). Advancing area activation towards a general model of eye movements in visual search. In W.D. Gray (Ed.), *Integrated Models of Cognitive Systems*. New York: Oxford University Press, pp. 120-131.
5. Pomplun, M., Carbone, E., Koesling, H., Sichelschmidt, L. & Ritter, H. (2006). Computational Models of Visual Tagging. In G. Rickheit & I. Wachsmuth (Eds.), *Situated Communication*. Berlin: Mouton de Gruyter, pp. 213-246.
6. Shen, J., Reingold, E. M., Pomplun, M. & Williams, D. E. (2003). Saccadic selectivity during visual search: The influence of central processing difficulty. In J. Hyönä, R. Radach & H. Deubel (Eds.), *The Mind's Eyes: Cognitive and Applied Aspects of Eye Movement Research* (pp. 65-88). Amsterdam: Elsevier Science Publishers.
7. Pomplun, M. (dissertation commercially published in 1998). *Analysis and Models of Eye Movements in Comparative Visual Search*. Göttingen: Cuvillier.
8. Pomplun, M., Rieser, H., Ritter, H. & Velichkovsky, B.M. (1997). Augenbewegungen als kognitionswissenschaftlicher Forschungsgegenstand. In Kluwe, R.H. (Ed.), *Kognitionswissenschaft: Strukturen und Prozesse intelligenter Systeme*, 65-106. Wiesbaden: Deutscher Universitätsverlag.
9. Velichkovsky, B.M., Pomplun, M. & Rieser, H. (1996). Attention and communication: Eye-movement-based research paradigms. In Zangemeister, W.H., Stiehl, H.S. & Freksa, C. (Eds.), *Visual Attention and Cognition*, 125-154. Amsterdam: Elsevier.

JOURNAL PAPERS (8 submitted, 33 published/to appear)

10. Pomplun, M., Silva, E., Ronda, J.M., Cain, S.W., Münch, M.Y. & Duffy, J.F. (submitted). The effects of circadian phase, time awake, and imposed sleep restriction on performing complex visual tasks: Evidence from comparative visual search.
11. Ahmed-Wick, F., Garaas, T.W. & Pomplun, M. (submitted). Saccadic adaptation reveals link between static and dynamic maps of visual attention.
12. Wang, H.C. & Pomplun, M. (submitted). The attraction of attention to texts in real-world scenes.
13. Wang, H.C., Hsu, L.C., Tien, Y.M. & Pomplun, M. (submitted). Using Latent Semantic Analysis to estimate semantic transparency and study how two-character Chinese words are accessed under different transparency conditions.
14. Hwang, A.D. & Pomplun, M. (submitted). The dynamics of top-down and bottom-up control of visual attention during search in complex scenes.
15. Mariwa, H.P., Xu, Y. & Pomplun, M. (submitted). Piecewise mental rotation.
16. Pomplun, M., Sunkara, S., Fairley, A.V. & Xiao, M. (submitted). Using pupil size as a measure of cognitive workload in video-based eye-tracking studies.

17. Schneps, M., Rose, T., Greenhill, L. & Pomplun, M. (submitted). Peripheral Sensitivity Linked to Dyslexia is an Advantage in Astrophysics.
18. Schneier, F.R., Pomplun, M., Sy, M. & Hirsch, J. (to appear). Neural response to eye contact and paroxetine treatment in generalized social anxiety disorder. *Psychiatry Research: Neuroimaging*.
19. Hwang, A.D., Wang, H.C. & Pomplun, M. (2011). Semantic guidance of eye movements in real-world scenes. *Vision Research*, 51, 1192-1205.
20. Spring, M., Pomplun, M. & Carrasco, M. (2011). Tracking without perceiving: A dissociation between eye movements and motion perception. *Psychological Science*, 22, 216-225.
21. Garaas, T. W., & Pomplun, M. (2011). Distorted object perception following whole-field adaptation of saccadic eye movements. *Journal of Vision*, 11(1):2, 1–11.
22. Luo, G., Garaas, T. W., Pomplun, M., & Peli, E. (2010). Inconsistency between peri-saccadic mislocalization and compression: Evidence for separate “what” and “where” visual systems. *Journal of Vision*, 10(12):32, 1–8.
23. Nestor, P.G., Klein, K., Pomplun, M., Niznikiewicz, M. & McCarley, R.W. (2010). Gaze cueing of attention in schizophrenia: Individual differences in neuropsychological functioning and symptoms. *Journal of Clinical and Experimental Neuropsychology*, 32, 281-288.
24. Cohen, N.J., Pomplun, M., Gold, B.J. & Sekuler, R. (2010). Sex differences in the production and acquisition of complex skilled movements. *Experimental Brain Research*, 205, 183-193.
25. Wang, H.C., Pomplun, M., Chen, M., Ko, H. & Rayner, K. (2010). Estimating the effect of word predictability on eye movements in Chinese reading using latent semantic analysis and transitional probability. *Quarterly Journal of Experimental Psychology*, 63, 1374-1386.
26. Wang, H.-C., Hwang, A. D. & Pomplun, M. (2010). Object Frequency and Predictability Effects on Eye Fixation Durations in Real-World Scene Viewing. *Journal of Eye Movement Research*, 3(3):3, 1-10.
27. Hwang, A.D., Higgins, E.C. & Pomplun, M. (2009). A model of top-down attentional control during visual search in complex scenes. *Journal of Vision*, 9 (5):25, 1-18.
28. Garaas, T.W. & Nieuwenhuis, T., & Pomplun, M. (2008). A gaze-contingent paradigm for studying continuous saccadic adaptation. *Journal of Neuroscience Methods*, 168, 334-340.
29. Gold, B.J., Pomplun, M., Rice, N.J., & Sekuler, R. (2008). A new way to quantify the fidelity of imitation: Preliminary results with gesture sequences. *Experimental Brain Research*, 187, 139-152.
30. Garaas, T.W. & Pomplun, M. (2008). Inspection time and visual-perceptual processing. *Vision Research*, 48, 523-537.
31. Xiao, M., Wong, M., Umali, M., & Pomplun, M. (2007). Using eye-tracking to study audio-visual perceptual integration. *Perception*, 36, 1391-1395.
32. Xu, Y., Higgins, E.C., Xiao, M., & Pomplun, M. (2007). Mapping the color space of saccadic selectivity in visual search. *Cognitive Science*, 31, 877-887.
33. Carbone, E. & Pomplun, M. (2007). Motion misperception caused by attentional feedback connections: A neural model simulating the Fröhlich effect. *Psychological Research*, 71, 709-715.

34. Pomplun, M. (2006). Saccadic selectivity in complex visual search displays. *Vision Research*, 46, 1886-1900.
35. Essig, K., Pomplun, M. & Ritter, H. (2006). A neural network for 3D gaze recording with binocular eye trackers. *International Journal of Parallel, Emergent, and Distributed Systems*, 21 (2), 79-95.
36. Jang, S.W., Pomplun, M., Kim, G.Y. & Choi, H.I. (2005). Adaptive robust estimation of affine parameters from block motion vectors. *Image and Vision Computing*, 23 (14), 1250–1263.
37. Tsotsos, J.K., Liu, Y., Martinez-Trujillo, J.C., Pomplun, M., Simine, E. & Zhou, K. (2005). Attending to Visual Motion. *Computer Vision and Image Understanding*, 100, 4-30.
38. Tarasevich, P., Pomplun, M., Fillion, S. & Broberg, D. (2005). The Enhanced Restricted Focus Viewer. *International Journal of Human-Computer Interaction*, 19 (1), 35-54.
39. Martinez-Trujillo, J.C., Tsotsos, J.K., Simine, E., Pomplun, M., Wildes, R., Treue, S., Heinze, H.J. & Hopf, J.M. (2005). Selectivity for Speed Gradients in Human Area MT/V5. *Neuroreport*, 16 (5), 435-438.
40. Shen, J., Reingold, E.M. & Pomplun, M. (2003). Guidance of Eye Movements during Conjunctive Visual Search: The Distractor-Ratio Effect. *Canadian Journal of Experimental Psychology*, 57, 76-96.
41. Pomplun, M., Shen, J. & Reingold, E.M. (2003). Area activation: A computational model of saccadic selectivity in visual search. *Cognitive Science*, 27, 299 - 312.
42. Charness, N., Reingold, E.M., Pomplun, M. & Stampe, D.M. (2001). The perceptual aspect of skilled performance in chess: Evidence from eye movements. *Memory & Cognition*, 29, 1146-1152.
43. Pomplun, M., Reingold, E.M. & Shen, J. (2001). Investigating the visual span in comparative search: The effects of task difficulty and divided attention. *Cognition*, 81, B57-B67.
44. Pomplun, M., Reingold, E.M. & Shen, J. (2001). Peripheral and parafoveal cueing and masking effects on saccadic selectivity in a gaze-contingent window paradigm. *Vision Research*, 41, 2757 - 2769.
45. Pomplun, M., Sichelschmidt, L., Wagner, K., Clermont, T., Rickheit, G. & Ritter, H. (2001). Comparative visual search: A difference that makes a difference. *Cognitive Science*, 25 (1), 3-36.
46. Reingold, E.M., Charness, N., Pomplun, M. & Stampe, D.M. (2001). Visual Span in Expert Chess Players: Evidence from Eye Movements. *Psychological Science*, 12, 49-56.
47. Shen, J., Reingold, E.M. & Pomplun, M. (2000). Distractor ratio influences patterns of eye movements during visual search. *Perception*, 29, 241-250.
48. Mataric, M. & Pomplun, M. (1998). Fixation behavior in observation and imitation of human movement. *Cognitive Brain Research*, 7, 191-202.
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85. Attar, N.H., Schneps, M.H. & Pomplun, M. (submitted). Working memory load increase predicts visual search efficiency. *Meeting of the Vision Sciences Society (VSS 2012)*, Naples, Florida.
86. Pomplun, M., Silva, E., Ronda, J.M., Cain, S.W., Münch, M.Y. & Duffy, J.F. (submitted). Circadian phase, time awake, and chronic sleep restriction influence performance on complex visual tasks. *Sleep 2012*, Boston, MA.
87. Higgins, E.C., Pomplun, M., Tran, R. & Rayner, K. (2011, November). Saccadic adaptation to random error. Poster at the *Annual Meeting of the Psychonomic Society*, Seattle, WA.
88. Ahmed-Wick, F., Garaas, T.W., Eglington, L. & Pomplun, M. (2011, August). Saccadic adaptation alters the attentional field. Poster at the *16th European Conference on Eye Movements (ECEM2011)*, Marseille, France.
89. Wang, H.C., Angele, B., Schotter, E., Yang, J., Simovici, D., Pomplun, M. & Rayner, K. (2011, August). Singular value decomposition is a valid predictor of stroke importance in reading Chinese. Poster at the *16th European Conference on Eye Movements (ECEM2011)*, Marseille, France.
90. Wang, H.C. & Pomplun, M. (2011, July). The attraction of visual attention to texts in real-world scenes – are Chinese texts attractive to non-Chinese Speakers? Poster at the *Asia-Pacific Conference on Vision (APCV 2011)*, Hong Kong, China.
91. Eglington, L., Ahmed-Wick, F. & Pomplun, M. (2011, May). Visual Attention and Working Memory. Poster presented at the *17th Massachusetts Statewide Undergraduate Research Conference*, Amherst, Massachusetts.
92. Diaz-Merced, W.L., Schneps, M.H., Brickhouse, N., Pomplun, M., Brewster, S. & Mannone, J. (2011, May). Exploring Sound to Convey Information. *218th Meeting of the American Astronomical Society (AAS)*, Boston, MA.
93. Schneps, M.H., Brockmole, J.R., Rose, L.T., Pomplun, M., Sonnert, G. & Greenhill, L.J. (2011, May). Dyslexia Linked to Visual Strengths Useful in Astronomy. *218th Meeting of the American Astronomical Society (AAS)*, Boston, MA.
94. Wang, H.C. & Pomplun, M. (2011, January). How does text in real-world scenes attract attention? Poster presented at the *MIT Scene Understanding Symposium (SUnS 2011)*, Cambridge, MA.
95. Wang, H.C., Tien, Y.M., Hsu, L.C. & Pomplun, M. (2010, July). The role of semantic transparency in the processing of two-character Chinese words. Poster at the *Asia-Pacific Conference on Vision (APCV 2010)*, Taipei, Taiwan.
96. Luo, G., Garaas, T.W., Pomplun, M. & Peli, E. (2010, May). Peri-saccadic mislocalization centered at salient stimulus instead of saccade target. Submitted to the *Meeting of the Visual Sciences Society 2010*. Naples, Florida, USA.
97. Hwang, A.D. & Pomplun, M. (2010, May). The dynamics of top-down and bottom-up control of visual attention during search in complex scenes. Poster presented at the *Meeting of the Visual Sciences Society 2010*. Naples, Florida, USA.
98. Ahmed, F., Hwang, A.D., Walsh, E.C. & Pomplun, M. (2010, May). Conspicuity of Object Features Determines Local versus Global Mental Rotation Strategies. Poster presented at the *Meeting of the Visual Sciences Society 2010*. Naples, Florida, USA.

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101. Garaas, T.W. & Pomplun, M. (2009, May). Distortion in perceived object size accompanies saccadic adaptation. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
102. Spring, M., Pomplun, M. & Carrasco, M. (2009, May). Differential effects of suppressed visual motion information on perception and action during binocular rivalry flash suppression. Talk at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
103. Pomplun, M., Garaas, T.W. & Carrasco, M. (2009, May). The effects of task demands on the dynamics of visual search in virtual 3D displays. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
104. Luo, G., Garaas, T.W., Pomplun, M. & Peli, E. (2009, May). Does saccadic space compression mean size shrinking? Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
105. Marino, F., Garaas, T.W. & Pomplun, M. (2009, May). On the perception of temporal visual events. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
106. Lo, H., Garaas, T.W. & Pomplun, M. (2009, May). Measuring the properties of the post-saccadic visual error calculation. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
107. Ackermann, J.F., Pomplun, M. & Landy, M.S. (2009, May). Conservatism in a 2AFC Discrimination Task. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
108. Schneps, M., Rose, T.L., Martinez-Conde, S. & Pomplun, M. (2009, May). Covert Orienting Reflex: Involuntary pupil response predicts microsaccade production. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
109. Hwang, A.D., Wang, H.C. & Pomplun, M. (2009, May). Semantic guidance of eye movements during real-world scene inspection. Poster at the *Meeting of the Visual Sciences Society 2009*. Naples, Florida, USA.
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112. Umali, M., Pomplun, M., & Hirsch, J. (2008, November). Cognitive and stimulus-driven guidance in feature-based visual search. *The 38nd Annual Meeting of the Society for Neuroscience* in Washington, D.C.

113. Garaas, T.W., Marino, F. & Pomplun, M. (2008, November). A neural system for efficient visual search in autonomous robotics. Talk given at the *IEEE International Conference on Technologies for Practical Robot Applications*. Woburn, Massachusetts, USA.
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117. Xiao, M., Melo, H., Garaas, T., Hwang, A. & Pomplun, M. (2007, July). Cognitive effects of gaze input and stereoscopic depth on human-computer interaction. Poster presented at the *Twenty-Ninth Annual Meeting of the Cognitive Science Society, 2007*, Nashville, Tennessee.
118. Gold, B.J., Pomplun, M., Rice, N.J., & Sekuler, R. (2007, May). A novel approach to studying human imitation. Oral presentation at the *Eleventh International Conference on Cognitive and Neural Systems*, Boston, Massachusetts.
119. Garaas, T., Xiao, M. & Pomplun, M. (2006, July). Implicit and Explicit learning as it relates to machine vision systems. Research poster presented at the *2006 ACM SIGGRAPH Conference*, Boston, Massachusetts.
120. Xu, Y., Higgins, E., Xiao, M., & Pomplun, M. (2006, April). Color and the guidance of visual search. Poster presented at the *12th Massachusetts Conference On Undergraduate Research*, Boston, Massachusetts.
121. Alshibli, A., Pomplun, M., Stefanescu, D., Xu, Z., & Zinoviev, D. (2006, March). Evaluation of Web Page Complexity through Pupil Dilation Measurement. Oral presentation at the *2006 Suffolk University Academic Conference*, Boston, Massachusetts.
122. Kaldy, Z., Blaser, E., Kibbe, M., & Pomplun, M. (2005, May). What drives visual salience in young infants? Poster presented at the *Annual Meeting of the Vision Sciences Society, May 6-11*, Sarasota, Florida.
123. Blaser, E., Kaldy, Z., Eddy, K., & Pomplun, M. (2005, May). Determining salience for complex objects. *Poster presented at the Annual Meeting of the Vision Sciences Society, May 6-11*, Sarasota, Florida.
124. Pomplun, M., Weng, Z., Wong, M. & Hu, C. (2005, March). Area Activation II: Predicting saccadic selectivity in visual search tasks. Invited oral presentation at the *US Air Force Workshop on Integrated Models of Cognitive Systems (IMoCS)*, March 3-6, Saratoga Springs, New York.
125. Koesling, H., Pomplun, M. & Ritter, H. (2004, August). One + One = Two? - The Effects of Non-Spatial Object Clustering on Numerosity Estimation. *27th Annual Meeting of the European Conference on Visual Perception (ECVP)*, Budapest, Hungary.
126. Carbone, E. & Pomplun, M. (2004, July). Motion misperception caused by attentional feedback connections: A neural model simulating the Fröhlich effect. *Visual Processing in Microgenesis:*

- Feedforward or Reentrant? *German-Estonian Inter-University Symposium*, Hiiumaa Island, Estonia.
127. Martinez-Trujillo, J.C., Tsotsos, J.K., Simine, E., Pomplun, M., Wildes, R., Treue, S., Heinze, H.J. & Hopf, J.M. (2004, May). A human cortical specialization for the processing of velocity gradients in moving stimuli. *Fourth Annual Meeting of the Vision Sciences Society*, Sarasota, Florida.
 128. Hyppolite, J.R., Pomplun, M. & Carbone, E. (2004, May). The Eye-Hand Span in Human-Computer Interaction. *10th Massachusetts Conference On Undergraduate Research*, Boston, Massachusetts.
 129. Tsotsos, J.K., Martinez-Trujillo, J.C., Simine, E., Pomplun, M., Treue, S., Heinze, H.J. & Hopf, M. (2003, November). A human cortical specialization for the processing of speed gradient information in moving stimuli. *The 33rd Annual Meeting of the Society for Neuroscience*, New Orleans, Louisiana.
 130. Simine, E., Martinez-Trujillo, J.C., Pomplun, M. & Tsotsos, J.K. (2003, June). Human integration time thresholds for discriminating transient changes in the direction of moving stimuli change with signal intensity. *York Conference in Honour to Dr. D. Regan*.
 131. Sunkara, S. & Pomplun, M. (2003, May). Using Pupil Dilation to Evaluate the Usability of Human-Computer Interfaces. *9th Massachusetts Conference On Undergraduate Research*, Boston, Massachusetts.
 132. Fazl, A. & Pomplun, M. (2002, November). Eye Movements to Crowded Stimuli: The First Landing Position is Less Accurate. *The 32nd Annual Meeting of the Society for Neuroscience in Orlando, Florida*.
 133. Schreiber, K., Simine, E., Martinez-Trujillo, J.C., Pomplun, M. & Tsotsos, J.K. (2002, November). Integration time for detecting transient changes in the direction of moving stimuli changes with signal intensity. *The 32nd Annual Meeting of the Society for Neuroscience in Orlando, Florida*.
 134. Reingold, E. M., Charness, N., Pomplun, M., & Stampe, D. M. (2001, August). Expertise attenuates change blindness: Evidence from a gaze-contingent window paradigm. *11th European Conference on Eye Movements*, Turku, Finland.
 135. Reingold, E. M., Shen, J., & Pomplun, M. (2001, August). The influence of the central discrimination difficulty on saccadic selectivity in visual search. *11th European Conference on Eye Movements*, Turku, Finland.
 136. Shen, J., Reingold, E. M., & Pomplun, M. (2000, September). Distraction of saccade selection by a color singleton. *Conference on "Eye Movements and Vision in the Natural World"*. Amsterdam, the Netherlands.
 137. Pomplun, M., Reingold, E.M., Shen, J. & Williams, D.E. (2000, May). Modeling saccadic selectivity in visual search tasks. *19th Banff Annual Seminar in Cognitive Science*, Banff, Canada.
 138. Sprenger, A., Pomplun, M. (2000, January). Optimizing eye-movement data by using neural nets. *Okulomotorik Workshop Zuerich*, Switzerland.
 139. Reingold, E. M., Shen, J., & Pomplun, M. (1999, September). How does the distractor ratio influence the patterns of eye movements? *10th European Conference on Eye Movements*, Utrecht, the Netherlands.

140. Reingold, E. M., Pomplun, M. & Shen, J. (1999, September). Guidance of search processes by parafoveal information. *10th European Conference on Eye Movements*, Utrecht, the Netherlands.
141. Pomplun, M., Shen, J. & Reingold, E. M. (1999, July). The visual span in comparative visual search. *6th Annual Conference of the Cognitive Science Association for Interdisciplinary Learning*, Hood River, Oregon.
142. Clermont, T., Koesling, H., Pomplun, M., Prestin, E. & Rieser, H. (1998, October). Eye-movement Research and the Investigation of Dialogue Structure. *The Second Swedish Symposium on Multimodal Communication*, Lund, Sweden.
143. Carbone, E., Pomplun, M. & Sichelschmidt, L. (1998, April). Kann Rot egal sein? Irrelevante Information bei vergleichender visueller Suche. *40. Tagung experimentell arbeitender Psychologen*, Marburg, Germany.
144. Velichkovsky, B.M., Sprenger, A., Pomplun, M. & Unema, P. (1997, November). Eye movements and encoding manipulations in two visual memory tasks. *Abstracts of the Psychonomic Society 38th Annual Meeting*, Philadelphia, USA. p.73.
145. Pomplun, M., Wagner, K., Velichkovsky, B.M. & Ritter, H. (1997, September). Eye movements in comparative visual search. *9th European Conference on Eye Movements*, Ulm, Germany.
146. Velichkovsky, B.M., Sprenger, A., Pomplun, M. & Unema, P. (1997, September). Eye movements dissociate levels of processing. *9th European Conference on Eye Movements*, Ulm, Germany.
147. Carbone, E., Pomplun, M. & Sichelschmidt, L. (1996, April). Untersuchung visueller Aufmerksamkeitsprozesse waehrend vergleichender Suche. *38. Tagung experimentell arbeitender Psychologen*, Eichstaett, Germany.
148. Pomplun, M., Rieser, H. & Velichkovsky, B.M. (1996, January). Übertragung von Blickbewegungen und Kooperationsexperimente. *Zweite Fachtagung der Gesellschaft für Kognitionswissenschaft (KogWis96)*, Hamburg, Germany.
149. Pomplun, M., Velichkovsky, B.M., Rieser, J. & Ritter, H. (1995, September). New paradigms in eye-movement research. *Eighth European Conference on Eye Movements*, Derby, UK.

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150. Hwang, A.D., Higgins, E.C. & Pomplun, M. (2009). Informativeness guides visual search in natural scenes. *University of Massachusetts Boston Computer Science Technical Report 2/2009*.
151. Lennartz, A. & Pomplun, M. (2009). The feasibility of gaze tracking for “mind reading” during search. *University of Massachusetts Boston Computer Science Technical Report 1/2009*.
152. Marino, F., Garaas, T.W., Zhang, V. Y., Maw, N. N. & Pomplun, M. (2008). Real-time camera control using eye-movement patterns. *University of Massachusetts Boston Computer Science Technical Report 1/2008*.
153. Pomplun, M. & Mataric, M. (2007). A segmentation algorithm for the comparison of human limb trajectories. *University of Massachusetts at Boston Computer Science Technical Report 1/2007*.
154. Pomplun, M. & Mataric, M.J. (2000). Evaluation metrics and results of human arm movement imitation. *IRIS Techical Report IRIS-00-384, University of Southern California*.

155. Pomplun, M., Prestin, E. & Rieser, H. (1998). Eye-movement research and dialogue structure. *CRC 360 Technical Report 12/1998, University of Bielefeld.*
156. Faisal, A.A., Fislage, M., Pomplun, M., Rae, R. & Ritter, H. (1998). Observation of human eye movements to simulate visual exploration of complex scenes. *Technical Report, University of Bielefeld.*
157. Pomplun, M., Carbone, E., Sichelschmidt, L., Velichkovsky, B.M. & Ritter, H. (1998). How to disregard irrelevant stimulus dimensions: Evidence from comparative visual search. *CRC 360 Technical Report 7/1998, University of Bielefeld.*
158. Koesling, H., Pomplun, M. & Ritter, H. (1998). The effects of structural information on perceived numerosity in two-dimensional object distributions. *CRC 360 Technical Report 2/1998, University of Bielefeld.*
159. Mataric, M.J. & Pomplun, M. (1997). What do people look at when watching human movement? *Brandeis University Computer Science Technical Report CS-97-194.*
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