

# Curriculum Vitae

## Personal Data

Walter F. Bischof  
Department of Computing Science  
University of Alberta  
Edmonton, Alberta, T6G 2E8, Canada  
Tel: +1-780-492-3114  
Fax: +1-780-492-1071  
Email: [wfb@ualberta.ca](mailto:wfb@ualberta.ca)  
Web: <http://www.cs.ualberta.ca/~wfb>

## Education

1982 Ph.D. (summa cum laude) Psychology, University of Bern,  
Switzerland  
1981 lic.phil. Psychology, University of Bern, Switzerland  
1970 Matura, St. Gallen, Switzerland

## Employment

2014- Director, scians GmbH, Bern, Switzerland  
2014- Adjunct Professor, University of British Columbia, Canada  
2014- Professor Emeritus, University of Alberta, Canada  
2000-2014 Professor, Department of Computing Science, University of Alberta,  
Canada  
1998-2001 Professor, Department of Psychology, University of Alberta, Canada  
1996-2000 Adjunct Associate Professor of Computer Science, Perth, Australia  
1994-1995 Senior Research Fellow, Curtin University of Technology, Perth,  
Australia  
1992-2000 Adjunct Professor, Department of Computing Science, University of  
Alberta, Edmonton, Canada  
1992-1993 Senior Research Fellow, Department of Computer Science, University  
of Melbourne, Australia  
1990-1998 Associate Professor, Department of Psychology, University of Alberta,  
Canada  
1987-1990 Assistant Professor, Alberta Center for Machine Intelligence and  
Robotics and Department of Psychology, University of Alberta,  
Edmonton, Canada  
1986-1987 Visiting Scientist, Department of Psychology, University of Alberta,  
Edmonton, Canada  
1984-1986 Visiting Scientist, Department of Communication and Neuroscience,  
University of Keele, England  
1981-1984 Research Associate, Department of Psychology, University of Bern,  
Switzerland  
1976-1981 Research Assistant, Department of Psychology, University of Bern,  
Switzerland

- 1974-1980    Research Associate, Institute for Semantic and Cognitive Studies  
(ISSCO), Lugano and Geneva, Switzerland
- 1971-1974    Teaching Assistant for Statistical Methods and Programmer,  
Department of Psychology, University of Bern, Switzerland

## References

- Prof. H. Bunke, Institut für Informatik und angewandte Mathematik, University of Bern, Neubrückestrasse 10, 3012 Bern, Switzerland
- Prof. T. M. Caelli, Nicta Victoria Research Laboratory, Level 2, Bld 193, Electrical and Electronic Engineering, The University of Melbourne, Vic 3010, Australia
- Prof. Kingstone, A., Department of Psychology, University of British Columbia, 2136 West Mall, Vancouver BC, V6T 1Z4, Canada

## Teaching

At the University of Alberta, I have taught the following courses:

- CMPUT 114: Introduction to Computing Science (2001-2003, 2006)
- CMPUT 274/275: Tangible Computing (2013-2014)
- CMPUT 300: Computers and Society (2002-2003, 2007, 2013)
- CMPUT 301: Introduction to Software Engineering (2006,2008)
- CMPUT 302: Introduction to Human Computer Interaction (2011, 2013)
- CMPUT 411/511: Introduction to Computer Graphics (2000)
- CMPUT 470/499: Computational Neuroscience (2007-2010, 2014,with K. Pearson and K. Jones)
- CMPUT 607: Human Computer Interaction
- CMPUT 615: Artificial and Biological Perceptual Systems (2002)
- CMPUT 616: The Brain: Architecture, Computation, Visualization (2004, 2012)
- CMPUT 616: Computational Neuroscience (2005)
- PSYCO 104: Introduction to Psychology (1990)
- PSYCO 266: Perception, Laboratory (1987-1992)
- PSYCO 267: Perception (1986,2000-2001)
- PSYCO 364: Methods in Perception (1996-1999)
- PSYCO 365: Advanced Perception (1993-1994)
- PSYCO 403: Human and Machine Vision and Modeling (1993-95, with Di Lollo, V.)
- PSYCO 403/606: Computation, Perception and Action (1999)
- PSYCO 462: Advanced Perception (1987, with Caelli, T.)
- PSYCO 562: Advanced Psychology of Perception (1993,1994,1998)
- PSYCO 606: Topics in Instrumentation (1998)

At other universities, I have taught the following courses:

- University of Basel: Perception (1995)
- University of Bern: The Brain: Architecture, Computation, Visualization (2005)
- University of Bern: Perceptual and Cognitive Aspects of Multimedia (1996)
- University of Bern: Cognition and Learning (1995)
- University of Bern: Visual information processing in human and artificial systems (1988)
- University of Melbourne: Cognitive Science (1992, with others)

## Student Supervision

### Supervisor

- Anderson, Fraser. Training systems for laparoscopic surgery. (M.Sc. Computing Science, 2010)
- Anderson, Fraser. Gesture learning in human computer interaction. (Ph.D. Computing Science, 2014)
- Annett, Michelle. Virtual Reality Systems for Cognitive Neuroscience. (M.Sc. Computing Science, 2009)
- Annett, Michelle. The Fundamental Issues of Pen-Based Interaction. (Ph.D. Computing Science, 2014)
- Bolanzadeh, Niousha. Registration of CT, MRI and photometric measurements. (M.Sc. Computing Science, 2011)
- Briscoe, Gary. A Biologically Feasible Learning Mechanism. (Ph.D. Computer Science, Curtin University, Australia, 1998, associate supervisor)
- Friesen, Chris. Attentional Effects of Gaze Direction. (Ph.D. Psychology, 2001, co-supervisor)
- Giesbrecht, Barry. Masking by Object Substitution: Interactions between Visual Perception and Attention. (Ph.D. Psychology, University of Alberta, 1999, co-supervisor)
- Gao, Rui. Road Detection in Remote-Sense Images (M.Sc. Computing Science, supervisor, 2009).
- Hunter, Garrett. Gesture recognition using hidden Markov models, dynamic time warping, and geometric template matching. (M.Sc. Computing Science, 2013).
- Kasakevich, Maryia. Scientific Sonification for CFD. (M.Sc. Computing Science, co-supervisor, 2007).
- Lai, Shuk-Mei. A Technique for Automated Detection of Breast Tumors in Mammograms. (M.Sc. Computing Science, University of Alberta, 1988, co-supervisor)
- Lau, Tin-Kit. In Search of Breast Carcinoma: A Mammographic Asymmetry Approach (M.Sc. Computing Science, 1990)
- Ng, Shun Leung. Breast Cancer Diagnosis by Computer. (M.Sc. Computing Science, University of Alberta, 1990)
- Pearce, Adrian. Relational Evidence Theory (Ph. D. Computer Science, Curtin University, Australia, 1996, associate supervisor)
- Radzikowska, Milena. User interfaces. (Interdisciplinary Ph.D., University of Alberta, supervisor, until 2013)
- Snyder, Janice. Inhibition of return and visual search. (Ph.D. Psychology, University of Alberta, 2000, co-supervisor)
- Wang, Yuchen. Tangible computing on interactive surfaces. (M.Sc. Computing Science, University of Alberta, in progress)
- Wu, Qiong. Bi-layer video segmentation. (M.Sc. Computing Science, University of Alberta, 2008, co-supervisor).
- Yang, Xing Dong. A Performance Analysis of Motor-skill Training Using Haptic Training. (M.Sc. Computing Science, University of Alberta, 2007, co-supervisor).
- Zhou, Jun. Computer-aided map revision. (Ph.D. Computing Science, University of Alberta, 2006)

## **Supervisory Committee**

- Binsted, Gordon. Prototyping Human Perception-Action Systems. (Ph.D. Psychology, University of Alberta, 2001)
- Calhoun, Linda. Space, Time and Attention: Processing of Stimuli delivered to the hands. (Ph.D. Psychology, University of Alberta, 1989)
- Cheng, Irene. Feature extraction and adaptive on-line visualization for 3D texmesh using scale-space analysis and perceptual evaluation. (Ph.D. Computing Science, University of Alberta, 2005)
- Cheng, Li. A forestry image understanding system using a Bayesian approach. (Ph.D. Computing Science, University of Alberta, 2004)
- Cobzas, Dana. Image-based modeling and rendering. (Ph.D. Computing Science, University of Alberta, 2004)
- Fang, Qiongyan. 3D Stochastic Tree Generation from Multiple Views. (M.Sc. Computing Science, University of Alberta, 2004)
- Graham, Reiko. Characterizing General and Face Specific ERP Correlates of Face Memory. (Ph.D. Psychology, University of Alberta, 2002)
- Gorodnichy, Dmitri. Vision-based world-modeling using a piecewise linear representation of the occupancy function. (Ph.D. Computing Science, University of Alberta, 2000)
- Kelly, Debbie. Avian pattern and object perception. (Ph.D. Psychology, University of Alberta, 2001)
- Lei, Cheng. A Cluster based Free Viewpoint Video System using Region-tree based Scene Reconstruction. (Ph.D. Computing Science, 2009)
- Levner, Ilya. Hierarchical Associative Independent Component Analysis for Image Segmentation. (Ph.D. Computing Science, 2009)
- Mao, Hai. Physical-based non-Newtonian fluid animation using SPH. (Ph.D. Computing Science, 2006)
- Moreno, Camilo Arango. Interactive visualization of dependencies. (M.Sc., Computing Science, 2011).
- Murray, Kyle. The role of skill-based habits of use in consumer choice. (Ph.D. Business and Psychology, University of Alberta, 2004)
- Neeland, Claire. Women's use of the internet when coping with breast cancer. (M.A. Sociology, in progress).
- Neilson, Daniel. A study of match cost functions and colour use in global stereopsis. (Ph.D., Computing Science, 2009)
- Pilarski, Patrick. Computational intelligence for rapid medical diagnostics: a solution to the cellular inverse light scattering problem (Ph.D. Electrical and Computer Engineering, University of Alberta, 2009)
- Popescu, Adrian. Perception and motor behavior. (Ph.D. Physical Education and recreation, University of Alberta, in progress)
- Simpson, Tyler. Assistive devices for paralyzed patients. (M.Sc. Physiology, University of Alberta, 2007)
- Taylor, Robyn. Augmenting Live Musical Performance through Music Visualization. (M.Sc. Computing Science, University of Alberta, 2005)
- Taylor, Robyn. Sonification of emotional systems. (Ph.D. Computing Science, in progress).
- Torres, Daniel. The ANIMUS Project: A framework for the creation of emotional and rational social agents. (M.Sc. Computing Science, 2003)
- Wang, Tao. Three-dimensional skeletonization techniques and applications. (Ph.D. Computing Science, University of Alberta, in progress).

- Wu, Qiong. Video Segmentation. (M.Sc. Computing Science, University of Alberta, 2008).
- Wu, Qiong. Realtime Image analysis. (Ph.D. Computing Science, University of Alberta, in progress).
- Yan, Ping. A performance evaluation framework of multi-resolution algorithms for real-time rendering. (Ph.D. Computing Science, University of Alberta, 2000)
- Ying, Lihang. Multimedia transmission over unreliable multi-source networks. (Ph.D. Computing Science, University of Alberta, 2008)

## **Examiner**

- Antonie, Maria-Luiza. Categorizing digital documents by Associating Content Features. (M.Sc. Computing Science, University of Alberta, 2002)
- Baldwin, Jonathan. Video for low-bandwidth telenavigation. (Ph.D. Computing Science, University of Alberta, 2000)
- Castro-Esau, Karen Lynne. Leaf-level hyperspectral studies on leaf senescence and species recognition. (Ph.D. Remote Sensing of the Environment, University of Alberta, 2005)
- Chan, Ming-yip. Recognizing 3-D Objects in Multiple Objects Scenes. (M.Sc. Cognitive Science, University of Melbourne, Australia, 1994)
- Desai, Neesha. Using Descriptors to simplify Scriptease. (M.Sc. Computing Science, University of Alberta, 2009)
- Fiala, Mark. Panoramic Computer Vision. (Ph.D. Computing Science, University of Alberta, 2002)
- Keith-Magee, Russell K. Learning and Development in Kohonen-style Self-Organizing Maps. (Ph.D. Computer Science, Curtin University, Australia, 2001)
- Lazarescu, Mihai. Incremental Learning for Querying Multimodal Symbolic Data. (Ph.D. Computer Science, Curtin University, Australia, 2000)
- Lee, Stan. Disparity contingent high spatial frequency constraints on the upper velocity limit of stereopsis. (Ph.D. Psychology, Carleton University, 2001).
- Leung, Eva. Parallel Algorithms for Relaxation Labelling. (M.Sc. Computing Science, University of Alberta, 1989)
- Liang, Jiandong. Interaction Techniques for Solid Modelling with a 3D Input Device. (Ph.D. Computing Science, University of Alberta, 1995)
- Lu, Juan. Objective Assessment of Psoriasis Treatment through Skin Images. (Ph.D. Computer Science, University of Melbourne, 2014)
- Mao, Hai. Physical-Based Animation of Non-Newtonian Fluids Using Particles. (Ph.D. Computing Science, University of Alberta, 2006)
- McCane, Brendan. Learning to Recognize 3D Objects from 2D Intensity Images. (Ph.D. Computer Science, James Cook University of North Queensland, Australia, 1996)
- McLean, Stuart. A Data-Driven Indexing Mechanism for the Recognition of Polyhedral Objects. (M.Sc. Computer Science, Deakin University, Australia, 1992)
- Potapovich, Yury. Using multiple gestalt features for large oil sand lump detection. (M.Sc. Computing Science, University of Alberta, 2008)
- Randall, Allan. Relaxation and Matching Relational Structures in Object Recognition. (M.Sc. Computing Science, University of Alberta, 1990)
- Schmidt, Mark. Automatic Brain Tumor Segmentation. (M.Sc. Computing Science, University of Alberta, 2005)

Tam, Yiu-Wing. Three-Dimensional Display of Medical Images. (M.Sc. Computing Science, University of Alberta, 1988)  
Wigena, Aji. Comparison of Thinning Algorithms. (M.Sc. Computing Science, University of Alberta, 1989)

## **Administration**

I have served on numerous committees, and I have taken on many administrative duties. Listed below is a selection of the more important duties.

University of Alberta, Text-Matching Software Committee (2012-2013)  
University of Alberta, Appeal Board, ad hoc Chair (2007)  
Faculty of Science, Academic Appeals Committee (2003-2004), Chair (2004-2014)  
Faculty of Science, Practice Intervention Committee, Chair (2011-2014)  
Faculty of Science, Awards Selection Committee (2008-2009)  
Department of Computing Science, Curriculum Committee, Chair (2012-2014)  
Department of Computing Science, Associate Chair Research (2006-2009)  
Department of Psychology, Program Director, Computational Psychology and Cognitive Systems (1999-2000)  
Department of Psychology, Computer Committee (1992-2000)

## **Editorial and Reviewing Activities**

### **Journal Editorial Responsibilities**

Editor, Journal of Eye Movement Research (2012–present)  
Associate Editor, Spatial Vision, later Seeing and Perceiving (1991-2013)  
Editorial Board, Electronic Letters on Computer Vision and Image Analysis (2002-2009)  
Editorial Board, Journal of Eye Movement Research (2006-present),  
Editorial Board, Schweizerische Zeitschrift für Psychologie (1999-2004)  
Member, IEEE Multimedia Communications Technical Committee

### **Journal Reviews**

ACM Transactions on Applied Perception  
Attention, Perception & Performance  
BMC Neuroscience  
Canadian Journal of Psychology  
Computer Vision and Image Understanding  
IEEE Transactions on Aerospace and Electronic Systems  
IEEE Transactions on Biomedical Engineering  
IEEE Transactions on Medical Imaging  
IEEE Transactions on Neural Systems & Rehabilitation  
IEEE Transactions on Pattern Analysis and Machine Intelligence  
IEEE Transactions on Systems, Man & Cybernetics  
Image and Vision Computing  
International Journal of Pattern Recognition and Artificial Intelligence  
Journal of Eye Movement Research  
Journal of Mathematical Psychology  
Journal of Vision

Machine Vision and Applications  
Medical and Life Sciences Engineering  
Nature Reviews Neuroscience  
Pattern Recognition Letters  
Perception  
Perception & Psychophysics  
PLOS One  
Presence  
Proceedings of the Royal Society of London  
Psychological Science  
Psychonomic Bulletin and Review  
Quarterly Journal of Experimental Psychology  
Schweizerische Zeitschrift für Psychologie  
Seeing and Perceiving (formerly Spatial Vision)  
Vision Research  
Visual Cognition

## **Conferences**

Reviewer, European Conference on Eye Movements (ECEM) 2015, (5 reviews)  
Reviewer, ACM SIGCHI Conference on Human Factors in Computing Systems 2014, (2 reviews)  
Program Committee, European Conference on Eye Movements (ECEM) 2013, (20 reviews)  
Reviewer, Digital Image Computing: Techniques and Applications (DICTA) 2012  
Program Committee, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2011, (10 reviews)  
Program Committee, Seventh Canadian Conference on Computer and Robot Vision (CRV) 2011, (4 reviews)  
Program Committee, Digital Image Computing: Techniques and Applications (DICTA) 2010 (5 reviews)  
Reviewer, 19th IEEE International Symposium in Robot and Human Interactive Communication (1 review)  
Reviewer, SmartGraphics, 2010, (4 reviews)  
Program Committee, Seventh Canadian Conference on Computer and Robot Vision (CRV) 2010, (4 reviews)  
Reviewer, International Conference on Pattern Recognition (ICPR), 2010, (6 reviews)  
Reviewer, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2010, (10 reviews)  
Program Committee, Digital Image Computing: Techniques and Applications (DICTA) 2009 (8 reviews)  
Program Committee, International Symposium on Visual Computing, 2009, (4 reviews)  
Reviewer, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2009  
Reviewer, Third Joint Eurohaptics Conference and Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, 2009  
Program Committee, International Symposium on Visual Computing, 2008  
Program Committee, ACM Multimedia 2008 Technical Demo  
Program Committee, International Conference on Pattern Recognition (ICPR), 2008

Reviewer, IEEE International Geoscience & Remote Sensing Symposium 2008  
Program Committee, Digital Image Computing: Techniques and Applications  
(DICTA) 2008  
Earlier conferences not listed

In addition, I have reviewed numerous manuscripts for workshops and conferences, in the areas of Psychology, Computer Science and Medicine.

### **Granting Agencies**

Committee Member:

Canadian Breast Cancer Foundation, Prairies and Northwest Territories Chapter,  
(2001-2007)

Reviewer:

Australian Research Committee

Canada Foundation for Innovation

Canada Research Chairs

Fonds pour la Formation de Chercheurs et l'Aide à la Recherche, Québec, Canada

National Science Foundation, USA

Natural Science and Engineering Research Council, Canada

Swiss National Science Foundation, Switzerland

### **Research Interests**

In Computer Science, my interests are primarily focused on investigating *human-computer interactions*. First, in the context of Virtual Environments, I am interested in how to best interact with these environments, what interaction devices are best used, and what combinations of interaction modalities (visual, auditory, or haptic) are optimal. Second, I am working on several projects for evaluating the perceptual quality of visualizations in very complex stimulus domains and for evaluating the efficiency of feedback mechanisms in training devices. Third, I am interested in Machine Learning systems that learn from, and adapt to human users in solving tasks such as map extraction from remotely sensed images.

In Psychology, I have strong interests in visual perception and attentional mechanisms. In *visual perception*, I have a long-standing interest in motion perception and in the recognition of movement patterns. More recently, I have begun to investigate interactions of visual motion perception with haptic and auditory motion perception. With respect to *attentional mechanisms*, I have studied spatio-temporal characteristics of attention (e.g. using the attentional blink, the interaction of perception and attention, and I work on several projects investigating attentional characteristics in social attention and in navigation.

In recent years, I have focused on perceptual and attentional aspects of *spatial navigation*. I study how humans navigate through natural and artificial environments, and I am interested in three main questions: First, what perceptual information do humans rely on for orienting and for navigation? Second, how is spatial attention directed in orienting and navigation? Third, how are navigational capabilities affected by mental illnesses such as schizophrenia or Alzheimer's disease?



I am interested not only in the theoretical and methodological questions, but I am also interested in the *applications* of my work. In the area of spatial navigation, results of my work are being used in clinical applications, both for diagnostic and for rehabilitation purposes. In the area of human-computer interactions, I use results of perceptual quality of visualizations for designing optimal information transmission over networks and for the optimal design on control screens in mining; the work on feedback mechanisms in training devices is used in a system for remote training of surgeons, and my work on interaction in virtual environments is used in kinesiology and rehabilitation medicine.

## Grants

2015-2020	Eye Movements in Perception, Interaction and Visual Guidance of Actions (NSERC, discovery grant, \$25,000 per year)
2011	Surgical Skill Evaluation System (NSERC, RTI, \$93,309)
2010	Investigating the Use of a Multi-Touch Table-Top in Upper Extremity Rehabilitation Programs (Glenrose Hospital Foundation Grant, \$6800)
2011-2013	3D Multimedia in Mobile Handheld Edutainment: Impacts and Benefits on Critical Thinking and Learning Performance (SSHRC Strategic Research Grant, \$50,000)
2009-2014	Attention in Spatial Navigation (NSERC, discovery grant, \$25,000 per year)
2009	Hapto-audio-visual environments for collaborative surgical training, (NSERC, equipment grant, \$85400, with Boulanger, P.)
2008-2011	Decision Support for Multi-mode Oil Sands Operations (NSERC, Collaborative Research and Development Grant, \$262,000, with F. Forbes, S. Ruecker and J. Ducette)
2004-2009	Spatial Navigation (NSERC, discovery grant, \$27,000 per year)
2000-2004	Coding and Learning Complex Movement Patterns (NSERC, operating grant, \$30,000 per year)
2000	Graphics workstation for research in Perception and Action (NSERC, equipment grant, \$17,986)
1998	Imaging Systems Equipment for Collaborative Multimedia Projects (IIPP, \$140,000, with Basu (P.I.), Koles, Li and Szafron)
1997	High performance visual display system (NSERC, equipment grant, \$18,688)
1996-2000	Motion perception and perceptual learning (NSERC, operating grant, \$28,190 per year)
1993-1996	Motion perception and spatiotemporal visual processing (NSERC, operating grant, \$23,000 per year).
1990-1993	Integration of visual information from multiple sources (NSERC, operating grant \$14,850 per year).
1989-1992	Multidimensional image segmentation (Swiss NSF, operating grant, with Groner, R. and Groner, M.)
1989	Image processing system (NSERC, equipment grant, \$18,384)
1988-1989	Generalized methods for image segmentation (University of Alberta, Central Research Fund, operating grant, \$8,752)
1988-1990	Inferring Shape from Shading (NSERC, operating grant, \$15,000 per year).
1987-1988	Visual Recognition of complex shapes (University of Alberta, Central Research Fund, operating grant, \$2,979, with Caelli, T.).

1984-1987 Motion Perception (Swiss NSF, fellowship).  
1982-1984 Process models of motion perception (Swiss NSF, operating grant).

## Invited presentations

University of Bern, Switzerland: Computer Science and Psychology  
University of Fribourg, Switzerland: Psychology  
University of Basel, Switzerland: Psychology  
University of Zürich, Switzerland: Neuroscience  
CSEM Research Center, Neuchatel, Switzerland  
University of Freiburg, Germany: Psychology  
University of Pisa, Italy: Computer Science  
University of Keele, England: Communication and Neuroscience  
University of Washington Pullman: Electrical Engineering and Computer Science  
University of Alberta, Canada: Computing Science and Psychology  
University of Saskatchewan, Saskatoon: Psychology  
Queen's University, Canada: Psychology  
University of British Columbia, Canada: Psychology  
University of Melbourne, Australia: Computer Science, School of Engineering  
Curtin University of Technology, Australia: Computer Science

## Publications

In the following sections, names of students (at the time the research was done) are underlined.

### Publications in refereed journals

Street, C. N. H., Bischof, W. F., Vadillo, M. A., & Kingstone, A. (2015). Inferring others' hidden thoughts: Smart guesses in a low diagnostic world. *Journal of Behavioral Decision Making*. Advance online publication. doi: 10.1002/bdm.1904.

Anderson, N., Anderson, F., Kingstone, A., and Bischof, W. F. (2015). A Comparison of Scanpath Comparison Methods, *Behavior Research Methods*, 47(4), 1377-1392.

Annett, M., Gupta, A., and Bischof, W.F. (2014) Exploring and understanding unintended touch during direct pen interaction. *ACM Transactions on Computer-Human Interaction*, 21(5), DOI 10.1145/267415.

Wu, D. W.-L., Anderson, N. C., Bischof, W. F., and Kingstone, A. (2014). Temporal dynamics of eye movements are related to differences in scene complexity and clutter, *Journal of Vision*, 14(9), 1-14.

Wu, D. W.-L., Bischof, W. F., and Kingstone, A. (2014). Natural gaze signaling in a social context. *Evolution & Human Behavior*, 35(3), 211-218.

Anderson, F., and Bischof, W. F. (2014). Augmented reality improves myoelectric prosthesis training. *International Journal on Disability and Human Development*, 13(3), 349-354.

Chisholm, J. D., Chapman, C. S., Amm, M., Bischof, W. F., Smilek, D., and Kingstone, A. (2014). A cognitive ethology study of first- and third-person perspectives, *PLOS One*, PLOS One, 9(3): e92696. doi:10.1371/journal.pone.0092696.

- Wu, D. W.-L., Bischof, W. F., Anderson, N., Jacobson, T., and Kingstone, A. (2014). The influence of personality on social attention. *Personality and Individual Differences*, 60, 25–29.
- Wu, D. W.-L., Bischof, W. F., and Kingstone, A. (2013). Looking while eating: The importance of the consequences of social interaction in social attention. *Scientific Reports*, 3,2356, DOI:10.1038/srep02356.
- Wu, D. W.-L., Chapman, C. S., Walker, E., Bischof, W. F., and Kingstone, A. (2013). Tapping in shared space results in improved synchrony. *Journal of Experimental Psychology: Human Perception and Performance*, 39, 1218-1223.
- Dalrymple, K., Gray, A. K., Perler, B. L., Birmingham, E., Bischof, W. F., Barton, J. J. S., and Kingstone, A. (2013). Eying the eyes in social scenes: Evidence for top-down control of stimulus selection in simultanagnosia. *Cognitive Neuropsychology*, 30, 25-40.
- Bolanzadeh, N., Bischof, W. F., Flores-Mir, C., and Boulanger, P. (2013). Multi-modal Registration of 3D Maxillofacial CBCT and Photogrammetry Data over Time, *DentoMaxillofacial Radiology*, 42(2), 22027087 (41 pages).
- Anderson, N., Bischof, W. F., Laidlaw, K. E. W., Risko, E. F., and Kingstone, A. (2013). Recurrence Quantification Analysis of Eye Movements, *Behavior Research Methods*, 45(3), 842-856.
- Bilash, O., Cheng, I., Wong, V., Basu, A., and Bischof, W.F. (2012) Foreign language learning on mobile devices: implications for Alberta’s teachers. *Notos*, 12, 25-40.
- Cheng, I., Sen, A., Basu, A., Bischof, W. F., and Bilash, O. (2012). An integrated edu-media framework for collaborative learning on handhelds. *Advances in Education Research*, (6 pages).
- Anderson, F., Birch, D.W., Boulanger, P., and Bischof, W. F. (2012). Sensor Fusion to Analyze and Evaluate Laparoscopic Surgical Skill, *Computer Aided Surgery*, 17, 269-283.
- Mesa-Munera, E., Ramirez-Salazar, J. F., Bischof, W. F., Boulanger, P., and Branch, J. W. (2012). Influence of Material Model and Modeling Space on the precision of a finite element simulations to predict the deformation of silicone rubber. *Revista avances en Sistemas e Informatica*, 8, 63-70.
- Mesa-Munera, E., Ramirez-Salazar, J. F., Boulanger, P., Bischof, W. F., and Branch, J. W. (2011). Estimation of Vibration and Force Stimulus Thresholds for Haptic Guidance in MIS Training. *Revista Ingenieria Biomedica*, 5(10), 17-22.
- Moreno, C. A., Bischof, W. F., and Hoover, H. J. (2012). Interactive visualization of dependencies. *Computers & Education*, 58, 1296-1307.
- Dalrymple, K. A., Birmingham, E., Bischof, W. F., Barton, J. J. S. and Kingstone, A. (2011). Opening a window on attention: Documenting and simulating recovery from simultanagnosia, *Cortex*, 47, 787-799.
- Dalrymple, K. A., Birmingham, E., Bischof, W. F., Barton, J. J. S. and Kingstone, A. (2011). Experiencing simultanagnosia through windowed viewing of complex scenes. *Brain Research*, 1367, 265-277.

- Anderson, F., Annett, M. K., and Bischof, W.F. (2010). Lean on Wii: Physical Rehabilitation with Virtual Reality and Wii Peripherals. *Annual Review of CyberTherapy and Telemedicine*, 8, 181-184.
- Annett, M., Anderson, F., and Bischof, W.F. (2010). Hands, Tables, and Groups Make Rehabilitation Awesome! *Annual Review of CyberTherapy and Telemedicine*, 8, 3-6.
- Snyder, J. J., and Bischof, W. F. (2010). Knowing where we're heading – when nothing moves. *Brain Research*, 1323, 127-138.
- Dalrymple, K. A., Bischof, W. F., Cameron, D., Barton, J. J. S. and Kingstone, A. (2010). Simulating simultanagnosia: spatially constricted vision mimics local capture and the global processing deficit, *Experimental Brain Research*, 202, 445-455.
- Annett, M. K., and Bischof, W. F. (2010). Investigating the Usability of Virtual Reality Systems. *Presence*, 19, 131-141.
- Birmingham, E., Bischof, W. F. and Kingstone, A. (2009b). Saliency does not account for fixations to eyes within social scenes. *Vision Research*, 49, 2992-3000.
- Dalrymple, K. A., Bischof, W. F., Cameron, D., Barton, J. J. S. and Kingstone, A. (2009). Global perception in simultanagnosia is not as simple as a game of connect-the-dots. *Vision Research*, 49, 1901-1908.
- Birmingham, E., Bischof, W. F., and Kingstone, A. (2009a). Get real! Resolving the debate about equivalent social stimuli. *Visual Cognition*, 17, 904-924.
- Zhou, J., Cheng, L. and Bischof, W. F. (2009). Spatial-temporal modeling of interactive image interpretation. *Spatial Vision*, 5, 455-472.
- Kelly, D. M. and Bischof, W. F. (2008). Orienting in virtual environments: How are surface features and environmental geometry weighted in an orientation task? *Cognition*, 109, 89-104.
- Oruç, I., Sinnott, S., Bischof, W. F., Soto-Faraco, S., Lock, K., and Kingstone, A. (2008). The effect of attention on the illusory capture of motion in bimodal stimuli. *Brain Research*, 1242, 200-208.
- Figuroa, P., Boulanger, P., Hoover, J. H., Taylor, R., and Bischof, W. F. (2008). InTml: A Dataflow Oriented Development System for Virtual Reality Applications. *Presence*, 17, 492-311.
- Birmingham, E., Bischof, W. F., and Kingstone, A. (2008b). Gaze selection in complex social scenes. *Visual Cognition*, 16, 341-355.
- Birmingham, E., Bischof, W. F., and Kingstone, A. (2008a). Social attention and real world scenes: The roles of action, competition and social content. *Quarterly Journal of Experimental Psychology*, 61, 986-998.
- Birmingham, E., Bischof, W. F. and Kingstone, A. (2007). Why do we look at people's eyes? *Journal of Eye Movement Research*, 1, 1-6.
- Zhou, J., Cheng, L. and Bischof, W. F. (2007). Online Novelty Detection in Human-Guided Road Tracking. *IEEE Transactions on Geoscience and Remote Sensing*, 45, 3967-3977.

- Zhou, J., Bischof, W. F., and Caelli, T. (2006). Road tracking in aerial images based on human-computer interaction and Bayesian filtering. *ISPRS Journal of Photogrammetry & Remote Sensing*, 61, 108-124.
- Smilek, D., Birmingham, E., Cameron, D., Bischof, W. F., and Kingstone, A. (2006). Cognitive ethology and exploring attention in real world scenes. *Brain Research*, 1080, 101-119.
- Kelly, D. M. and Bischof, W. F. (2005). Orienting in images of a 3-D rectangular environment. *Journal of Experimental Psychology: Human Perception and Performance*, 31, 1391-1403.
- Figuroa, P., Bischof, W. F., Boulanger, P. and Hoover, H. J. (2005). Efficient comparison of platform alternatives in interactive virtual reality applications. *International Journal of Human-Computer Studies*, 62, 73-103.
- Visser, T. A. W., Bischof, W. F. and Di Lollo, V. (2004). Rapid serial visual distraction: Task-irrelevant items can produce an attentional blink. *Perception & Psychophysics*, 66, 1418-1432.
- Giesbrecht, B., Bischof, W. F. and Kingstone, A. (2004). Seeing the light: Adapting luminance reveals low-level visual processes in the attentional blink. *Brain and Cognition*, 55, 307-309.
- Bischof, W. F. (2004). Visual Learning: An overview. *Swiss Journal of Psychology*, 63, 93-106.
- Bischof, W. F. and Boulanger, P. (2003). Spatial Navigation in Virtual Reality Worlds: An EEG Analysis. *Cyberpsychology and Behavior*, 6, 487-496.
- Giesbrecht, B., Bischof, W. F. and Kingstone, A. (2003). Visual masking during the attentional blink: Tests of the object substitution hypothesis. *Journal of Experimental Psychology: Human Perception and Performance*, 29, 238-258.
- Bischof, W. F. and Caelli, T. (2001). Learning spatio-temporal relational structures. *Applied Artificial Intelligence*, 15, 707-722.
- Kelly, D. M., Bischof, W. F., Wong-Wylie, D. R., and Spetch, M. (2001). Detection of Glass patterns by pigeons and humans, *Psychological Science*, 12, 338-342.
- Bischof, W. F. (2000). Learning to Recognize Objects. *Spatial Vision*, 13, 297-304.
- Rentschler, I., Caelli, T., Bischof, W., and Jüttner, M. (2000) Object recognition and image understanding: Theories of everything? *Spatial Vision*, 13, 129-135.
- Visser, T. A. W., Zuvic, S. M., Bischof, W. F. and Di Lollo, V. (1999). The attentional blink with targets in different spatial locations. *Psychonomic Bulletin and Review*, 6, 432-436.
- Visser, T. A. W., Bischof, W. F. and Di Lollo, V. (1999). Attentional switching in spatial and non-spatial domains: evidence from the attentional blink. *Psychological Bulletin*, 125, 458-469.
- Bischof, W. F., Reid, S. L., Wylie, D. R. W., and Spetch, M. L. (1999). Perception of coherent motion in random dot displays by pigeons and humans. *Perception & Psychophysics*, 61, 1089-1101.
- Kingstone, A. and Bischof, W. F. (1999). Perceptual grouping and motion coherence in visual search. *Psychological Science*, 10, 151-156.

- Wylie, D. R. W., Bischof, W. F., and Frost, B. J. (1998). Common reference frame for neural coding of translational and rotational self-motion. *Nature*, 392, No. 6673, 19 March 1998, 278-282.
- Koga, K., Groner, M., Bischof, W. F., and Groner, R. (1998). Motion trajectory illusion and eye movements. *Swiss Journal of Psychology*, 57, 5-17.
- Bischof, W. F. and Caelli, T. (1997). Scene understanding by rule evaluation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 19, 1284-1288.
- Bischof, W. F. and Caelli, T. (1997). Visual learning of patterns and objects. *IEEE Transactions on Systems, Man, and Cybernetics*, 27, 907-917.
- Foster, D. H. and Bischof, W. F. (1997). Bootstrap estimates of the statistical accuracy of thresholds from psychometric functions, *Spatial Vision*, 11, 135-139.
- Bischof, W. F., Seiffert, A. E. and Di Lollo, V. (1996). Transient-sustained input to directionally-selective motion mechanisms. *Perception*, 25, 1263-1280.
- Caelli, T. and Bischof, W. F. (1996) The role of machine learning in building image interpretation systems, *International Journal of Pattern Recognition and Artificial Intelligence*, 11, 143-168.
- Bischof, W. F. and Di Lollo, V. (1996). Psychophysical evidence for sustained input to directionally-selective motion mechanisms. *Perception*, 25, 65-76.
- Caelli, T. and Bischof, W. F. (1996). Machine Learning Paradigms for Pattern Recognition and Image Understanding. *Spatial Vision*, 10, 87-103.
- Bischof, W. F. and Di Lollo, V. (1995). On motion and metacontrast with simultaneous onset of stimuli. *Journal of the Optical Society of America A*, 12, 1623-1636.
- Di Lollo, V. and Bischof, W. F. (1995). The inverse-intensity effect in duration of visible persistence, *Psychological Bulletin*, 118, 223-237.
- Pearce, A. R., Caelli, T., and Bischof, W. F. (1994). Rulegraphs for graph matching in pattern recognition. *Pattern Recognition*, 27, 1231-1248.
- Pearce, A. R., Caelli, T., and Bischof, W. F. (1994). Learning relational structure: Applications in computer vision. *Journal of Applied Intelligence*, 4, 257-268.
- Di Lollo, V., Bischof, W. F., Walther-Müller, P. U., Groner, M. T., and Groner, R. (1994). Phosphor persistence in oscilloscopic displays: its luminance and visibility. *Vision Research*, 34, 1619-1620.
- Bischof, W. F. and Caelli, T. (1994). Learning structural descriptions of patterns: A new technique for conditional clustering and rule generation. *Pattern Recognition*, 27, 689-697
- Bischof, W. F. and Di Lollo, V. (1994). Maximum displacement (dmax) in compound bandpass-filtered images: A simple averaging rule: *Swiss Journal of Psychology*, 53, 127-134.
- Caelli, T. and Bischof, W. F. (1994). Computational approaches to human pattern recognition. *Spatial Vision*, 8, 57-76.
- Groner, R., Groner, M. T., Müller, P., Bischof, W. F., and Di Lollo, V. (1993). On the confounding effects of phosphor persistence in oscilloscopic displays. *Vision Research*, 33, 913-917.

- Di Lollo, V., Bischof, W. F., and Dixon, P. (1993). Stimulus-onset asynchrony is not necessary for motion perception and metacontrast masking. *Psychological Science*, 4, 260-263.
- Ng, S. L. and Bischof, W. F. (1992). Automated detection and classification of breast tumors. *Computers and Biomedical Research*, 25, 218-237.
- Lau, T.-K. and Bischof, W. F. (1991). Automated detection of breast tumors using the asymmetry principle. *Computers and Biomedical Research*, 24, 273-295.
- Di Lollo, V. and Bischof, W. F. (1991). Displacement limit (dmax) of sampled directional motion: direct and indirect estimates. *Perception and Psychophysics*, 49, 176-186.
- Di Lollo, V. and Bischof, W. F. (1991). Yes, there is a half-cycle limit for directional motion detection. *Vision Research*, 31, 763-765.
- Bischof, W. F. and Di Lollo, V. (1991). On the half-cycle displacement limit for directional motion detection. *Vision Research*, 31, 649-660.
- Foster, D. H. and Bischof, W. F. (1991). Thresholds from psychometric functions: Superiority of bootstrap to incremental and probit variance estimators. *Psychological Bulletin*, 109, 152-159.
- Groner, R., Groner, M. T., Bischof, W. F., and Di Lollo, V. (1990). On the relation between metacontrast masking and suppression of visible persistence. *Journal of Experimental Psychology: Human Perception and Performance*, 16, 381-390.
- Bischof, W. F. and Di Lollo, V. (1990). Perception of directional sampled motion in relation to displacement and spatial frequency: Evidence for a unitary motion system. *Vision Research*, 30, 1341-1362.
- Bischof, W. F. and Ferraro, M. (1989). Curved mondrians: shading analysis of patterned objects. *Computational Intelligence*, 5, 121-126.
- Groner, R., Groner, M., and Bischof, W. F. (1989). The dots within the fence: Protection of visible persistence by surrounding stimuli. *Studia Psychologica*, 31, 119-128.
- Lai, S. M., Li, X., and Bischof, W. F. (1989). On techniques for detecting circumscribed masses in mammograms. *IEEE Transactions on Medical Imaging*, 8, 377-386.
- Bischof, W. F. and Caelli, T. (1988). Parsing scale-space and spatial stability analysis. *Computer Vision, Graphics and Image Processing*, 42, 192-205.
- Caelli, T., Bischof, W. F., and Liu, Z.-Q. (1988). Filter-based models for pattern classification. *Pattern Recognition*, 21, 639-650.
- Groner, M. T., Bischof, W. F., and Di Lollo, V. (1988). A model of temporal integration. *Spatial Vision*, 3, 293-304.
- Foster, D. H. and Bischof, W. F. (1987). Bootstrap variance estimators for the parameters of small- sample sensory-performance functions. *Biological Cybernetics*, 57, 341-347.
- Bischof, W. F. and Groner, M. T. (1985). Beyond the displacement limit: An analysis of short- range processes in apparent motion. *Vision Research*, 25, 839-847.

Bischof, W. F., Foster, D. H., and Kahn, J. J. (1985). Selective internal operations in the recognition of locally and globally point-inverted patterns. *Spatial Vision*, 1, 179-196.

## **Refereed Conference Papers**

Annett, M. K., and Bischof, W. F. (2014). Hands, Hover, and Nibs: Exploring the Other Factors Influencing Stylus Accuracy on Tablets, *Proceedings of Graphics Interface 2015*, 203-210.

Furlan, R. M. M. M., Santana, G. A., Amaral, M. S., Nascimento, M. H. M., Yang, R., Bischof, W. F., Motta, A. R., and Las Casas, E. B. (2014). Jogos computacionais controlados pela língua: uma nova abordagem para reabilitação em motricidade orofacial [Computational Games controlled by language: a new approach to rehabilitation in orofacial myology], *22 Congresso Brasileiro de Fonoaudiologia*.

Annett, M. K., Anderson, F., Bischof, W. F., and Gupta, A. (2014). The pen is mightier: Understanding stylus behavior while inking on tablets. *Proceedings of Graphics Interface 2014*, pp. 193-200.

Annett, M. K., Ng, A., Dietz, P., Bischof, W. F., and Gupta, A. (2014). How low should we go? Understanding the perception of latency while inking. *Proceedings of Graphics Interface 2014*, pp. 167-174.

Ng, A., Annett, M.K., Dietz, P., Gupta, A., and Bischof, W. F. (2014). In the Blink of an Eye: Investigating Latency Perception during Stylus Interaction. *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems*, Toronto, Canada, April 26 – May 1, 2014, pp. 1103-1112.

Wu, D. W.-L., Jakobsen, T., Anderson, N.C., Bischof, W. F., and Kingstone, A. (2013). Why we should not forget about the non-social world: Subjective preferences, exploratory eye-movements, and individual differences. *35th Annual Meeting of the Cognitive Science Society*, Berlin, Germany, July 31 – August 3, 2013, pp. 3801-3806.

Anderson, F., and Bischof, W. F. (2013). Learning and performance with gesture guides, *ACM SIGCHI Conference on Human Factors in Computing Systems*, Paris, France, April 27 – May 2, 2013, pp. 1109-1118.

Annett, M. K., and Bischof, W. F. (2013). Your Left Hand Can Do It Too! Leveraging Intermanual, Symmetric Transfer on Touchscreens, *ACM SIGCHI Conference on Human Factors in Computing Systems*, Paris, France, April 27 – May 2, 2013, pp. 1119-1128.

Cheng, I., Bilash, O., Bischof, W. F., and Basu, A. (2012). Next Generation Handheld Graphics Edutainment for Learning in an Adaptive Student Centric Environment: Constraints and Benefits. *Eurographics*, May 13 – 18, 2012, Cagliari, Sardinia, Italy. CDROM, 6 pages.

Annett, M. K., Anderson, F., and Bischof, W. F. (2012). User perspectives on multi-touch tabletop therapy. *International Conference on Disability, Virtual Reality and Associated Technologies*, Laval, France, September 10 – 12, 2012, 255-260.

Anderson, F., and Bischof, W. F. (2012). Augmented reality improves myoelectric prosthesis training. *Venue: International Conference on Disability, Virtual Reality and Associated Technologies*, Laval, France, September 10 – 12, 2012, CDROM, 9 pages.



- Anderson, F. and Bischof, W. F. (2011). Movement consistency by optical tracking correlates with surgical expertise, Annual Meeting of the Society of American Gastrointestinal and Endoscopic Surgeons, San Antonio, Texas, USA, March 30 - April 2, 2011.
- Rossol, N., Cheng, I., Bischof, W.F. and Basu, A. (2011). A Framework for Adaptive Training and Games in Virtual Reality Rehabilitation Environments. Proceedings of the The 10th International Conference on Virtual Reality Continuum and Its Applications in Industry, Hongkong, Dec 11-12, 2011, 343-346.
- Radzikowska, M., Ruecker, S., Bischof, W.F., Annett, M., and Forbes, F. (2010). Geared Decisions: Experimenting with decision support visualizations. Proceedings of the 7<sup>th</sup> International Conference on Design and Emotion, Chicago, Oct 5-7, 2010.
- Anderson, F., Annett, M., Bischof, W.F., and Boulanger, P. (2010) Virtual Equine Assisted Therapy. Proceedings of IEEE Virtual Reality 2010, Waltham, MA, March 20-26, 2011. 255 - 256.
- Annett, M., Anderson, F., Goertzen, D., Halton, J., Ranson, Q., Bischof, W. F. and Boulanger, P. (2009). Using a Multi-touch Tabletop for Upper Body Motor Rehabilitation, 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group (CHISIG) of the Human Factors and Ergonomics Society of Australia, November 23-27, 261 - 264.
- Radzikowska, M., Ruecker, S., Bischof, W.F., Annett, M., and Forbes, F. (2009). Sprockets for Gears: Decision Support Visualization for Manufacturing Systems. Proceedings of the 2009 Chicago Colloquium on Digital Humanities and Computer Science, Nov 14-16.
- Yang, X. D., Mak, E., Irani, P., and Bischof, W. F. (2009). Dual-Surface Input: Augmenting One-Handed Interaction with Coordinated Front and Behind-the-Screen Input. Proceedings of the 11th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI09), Article No. 5 (10 pages).
- Yang, X. D., Irani, P., Boulanger, P., and Bischof, W. F. (2009). A Model for steering with haptic-force guidance. 12th IFIP conference on Human-Computer interaction (INTERACT 2009), Uppsala, Sweden, August 24-28, 465-478.
- Gao, R., and Bischof, W. F. (2009). Detection of linear structures in remote-sensed images. Proceedings of the International Conference on Image Analysis and Recognition, Halifax, NS, July 6-9, 896-905.
- Annett, M. K. and Bischof, W. F. (2009). The SNaP Framework: A VR Tool for Assessing Spatial Navigation, Proceedings of the 14th Annual CyberTherapy and CyberPsychology Conference, Lago Maggiore, Verbania-Intra, Italy, June 21-23, B.K. Wiederhold and G. Riva (Eds.) Annual Review of Cybertherapy and Telemedicine, 7, 61-65.
- Gao, R., and Bischof, W. F. (2009). Bayesian Tracking of Linear Structures in Aerial Images. Proceedings of the Sixth Canadian Conference on Computer and Robot Vision (CRV 2009) Kelowna, BC, May 25-27, 306-312.
- Yang, X. D., Irani, P., Boulanger, P. and Bischof, W. F. (2009). One-handed behind-the-display cursor input on mobile devices. Proceedings of the Conference on Human Factors in Computing Systems (CHI 2009), Boston, USA, April 4-9, 4501-4506.

- Annett, M. K. and Bischof, W. F. (2009). VR for Everybody: The SNaP Framework. In M. E. Latschik, D. Reiners, R. Blach, P. Figueroa, and R. Dachsel (Eds.), Proceedings of the 2nd IEEE VR Workshop on Software Engineering and Architectures for Realtime Interactive Systems (SEARIS) (pp. 25-30). Aachen: Shaker.
- Gómez, O., Treffitz, H., Boulanger, P., and Bischof, W. F. (2009). Collaborative Data Exploration Using Two Navigation Strategies, Proceedings of the IEEE Symposium on 3D User Interfaces (3DUI 2009), Lafayette, USA, March 14-15, 131-132.
- Wu, Q., Boulanger, P. and Bischof, W. F. (2008). Bi-layer video segmentation with forward and backward infrared illumination. Proceedings of the ACM International Conference on Multimedia, October 27-31, Vancouver, Canada, 1025-1026.
- Wu, Q., Boulanger, P. and Bischof, W. F. (2008). Automatic bi-layer video segmentation based on sensor fusion. Proceedings 19<sup>th</sup> International Conference on Pattern Recognition, Tampa, USA, December 8-11, Paper TuBCT8.53, 4 pages, CDROM.
- Dankers, A. A., Barnes, N., Bischof, W. F. and Zelinsky, A. (2008). Humanoid vision resembles primate archetypes. Proceedings 11th International Symposium on Experimental Robotics 2008 (ISER '08), Athens, Greece, July 14-17 2008.
- Cheng, L., Zhou, J., and Bischof, W. F. (2008). Online Prediction and Change Detection with Application to Interactive Road Tracking. Proceedings AAAI-08 Conference, Chicago, USA, July 13-17, pp. 805-810.
- Cheng, I., Kerr, C., and Bischof, W. F. (2008). Assessing rhythm recognition skills in a multimedia environment. IEEE International Conference on Multimedia & Expo, Hannover, Germany, June 23-26, 361-364.
- Yang, X. D., Bischof, W. F. and Boulanger, P. (2008c). The effects of hand motion on haptic perception of force direction. Eurohaptics, Madrid, Spain, June 10-13, CDROM.
- Wu, Q., Boulanger, P. and Bischof, W. F. (2008a). Robust real-time bi-layer video segmentation using infrared video. Proceedings Fifth Canadian Conference on Computer and Robot Vision, Windsor, Canada, May 28-30, pp. 87-94.
- Yang, X. D., Bischof, W. F. and Boulanger, P. (2008b). Perception of haptic force during hand movements. IEEE International Conference on Robotics and Automation, Pasadena, USA, May 19-23, pp. 2061-2066.
- Yang, X. D., Bischof, W. F. and Boulanger, P. (2008a). Validating the performance of haptic motor skill learning. Proceedings 16th Symposium on Haptic Interfaces for Virtual Environments and Teleoperator Systems, Reno, USA, March 13-14, pp. 129-135.
- Kasakevich, M., Boulanger, P., Bischof, W. F. and Garcia, M. (2007). Augmentation of Visualisation Using Sonification: A Case Study in Computational Fluid Dynamics. 13th Eurographics Symposium on Virtual Environments, CDROM.
- Taylor, R., Kasakevich, M., Boulanger, P., Garcia, M., and Bischof, W. F. (2007). Multi-modal interface for fluid dynamics simulations using 3-D localized sound. Proceedings of the 7th International Symposium on Smart Graphics, Kyoto, Japan, June 25-27, pp. 182-187.

- Cheng, I. and Bischof, W. F. (2007). Multimedia item type design for assessing human cognitive skills. Proceedings of the International Conference on Multimedia & Expo, Beijing, July 2-5, pp. 1830-1833.
- Zhou, J., Cheng, L., Caelli, T. and Bischof, W. F. (2007). Knowledge Transfer in Semi-automatic Image Interpretation. Proceedings of the 12th International Conference on Human-Computer Interaction, Beijing, July 22-27, pp 1028-1033.
- Boulanger, P., Wu, G., Bischof, W. F. and Yang, X. D. (2006). Hapto-Audio-Visual Environments for Collaborative Training of Ophthalmic Surgery Over Optical Network. IEEE International Workshop on Haptic Audio Visual Environments and their Applications, Ottawa, November 4-5, pp 21-26, CDROM.
- Kasakevich, M., Boulanger, P., Bischof, W. F. and Garcia, M. (2006). Multi-modal interface for real-time CFD solver. IEEE International Workshop on Haptic Audio Visual Environments and their Applications, Ottawa, November 4-5, pp 15-20, CDROM.
- Zhou, J., Cheng, L. and Bischof, W. F. (2006). A novel learning approach for semi-automatic road tracking. Proceedings of the Workshop on Pattern Recognition in Remote Sensing. Hong Kong, August 20, CDROM.
- Zhou, J., Bischof, W. F. and Sanchez-Azofeifa, A. (2006). Extracting lines in noisy images using directional information. Proceedings of the 18<sup>th</sup> International Conference on Pattern Recognition, Hong Kong, August 20-24, CDROM.
- Cheng, I. and Bischof, W. F. (2006). A Perceptual Approach to Texture Scaling based on Human Computer Interaction. Proceedings of Eurographics 2006, Vienna, September 4-6, CDROM.
- Zhou, J., Bischof, W. F. and Caelli, T. (2005). Robust and efficient road tracking in aerial images. Workshop on Object Extraction for 3D City Models, Road Databases and Traffic Monitoring - Concepts, Algorithms, and Evaluation, Vienna, Austria, August 29-30, CDROM.
- Zhou, J., Bischof, W. F. and Caelli, T. (2005). Human-computer interaction in map revision systems. Proceedings of the 11th International Conference on Human-Computer Interaction, Las Vegas, USA, July 22-27, CDROM.
- Zhou, J., Bischof, W. F. and Caelli, T. (2004). Understanding human-computer interactions in map revision. Proceedings of the Conference on Syntactical and Structural Pattern Recognition SSPR2004, Lisbon, Portugal, August 18-20, pp. 287-295.
- Boulanger, P., Torres, D., and Bischof, W. F. (2004). A reconfigurable VR environment to study spatial navigation in humans using EEG. Proceedings of the Eurographics Symposium on Virtual Environments VE-04. Grenoble, France, June 8-9, pp. 61-69.
- Caelli, T., Bischof, W. F. and Ferraro, M. (2003). A comparison of neural and graphical models for structural pattern recognition. Proceedings of the IAPR - TC3 International Workshop on Artificial Neural Networks in Pattern Recognition, Florence, Italy, Sept 12-13, pp. 1-7.
- Bischof, W. F. and Caelli, T. (2001). On the learning of complex movement sequences. In C. Arcelli, L. P. Cordella and G. Sanniti di Baja (Eds.) Visual Form 2001, New York: Springer, pp 463-472.

- Bischof, W. F. and Caelli, T. (2001). Learning complex action patterns with CRGst. In S. Singh, N. Murshed and W. Kropatsch (Eds.) *Advances in Pattern Recognition - IACPR 2001*, pp. 280-289.
- Bischof, W. F. and Caelli, T. (2000). Learning actions: Induction over spatio-temporal relational structures - CRGst. *Proceeding of the Workshop on Machine Learning in Computer Vision. 14th European AI Conference, Berlin, Germany, August 20-25*, 11-15.
- Bischof, W. F. and Caelli, T. (2000). Parallel techniques for rule-based scene interpretation. In F. J. Ferri, J. M. Iñesta, A. Amin, and P. Pudil (Eds.) *Advances in Pattern Recognition*, Berlin: Springer, pp. 318-26.
- Caelli, T. and Bischof, W. F. (1996). Learning to describe and efficiently recognize patterns and objects in scenes. *Proceedings of the IEEE International Conference on Systems, Man and Cybernetics, Beijing, China, Oct 14-17*, 2756-2761.
- Pearce, A. R., Caelli, T., and Bischof, W. F. (1996). CLARET: A new relational learning algorithm for interpretation in spatial domains. *Fourth International Conference on Control, Automation, Robotics and Vision, Singapore*, pp. 650-654.
- Bischof, W. F. and Caelli, T. (1995). Learning how to find patterns or objects in complex scenes. In C. Braccini, L. DeFloriani, and G. Vernazza (Eds.) *Image Analysis and Processing: 8th International Conference, San Remo, Italy, Sept 13-15*, pp. 287-292.
- Caelli, T. and Bischof, W. F. (1995). Finding complex targets in complex scenes using machine learning: A viable surveillance paradigm? *Proceedings of the workshop on Artificial Intelligence in Defense, Canberra, Nov 14*, pp. 53-71.
- Pearce, A. R., Caelli, T., and Bischof, W. F. (1994). Efficient Spatial and Temporal Learning Procedures and Relational Evidence Theory. *Transactions of the Western Australian Computer Science Symposium 1994, Perth, Australia*, pp. 1-5.
- Pearce, A. R., Caelli, T., and Bischof, W. F. (1993). Learning relational structures for 2D pattern and 3D object recognition. *Proceedings of the First Australian and New Zealand conference on Intelligence Information Systems, Perth, Australia, Dec 1-3*, pp. 50-54.
- Caelli, T. and Bischof, W. F. (1993). Learning structural descriptions of patterns and objects. *Proceedings of the First Asian Computer Vision Conference, Osaka, Japan, Nov 23-25*, pp. 684-687.
- Pearce, A. R., Caelli, T., and Bischof, W. F. (1993). Rulegraphs for pattern recognition. *Proceedings of the First Asian Computer Vision Conference, Osaka, Japan, Nov 23-25*, pp. 79-82.
- Bischof, W. F. and Ferraro, M. (1988). Curved Mondrians: A generalized approach to shape from shading. *Proceedings of the Canadian Artificial Intelligence Conference, Edmonton, Canada*, pp. 199-205.
- Lai, S. M., Li, X., and Bischof, W. F. (1988). Automated detection of breast tumors. *Proceedings of Vision Interface'88, Edmonton, Canada*, pp. 35-40.

## **Book Chapters**

Bischof, W.F., Anderson, N. C., and Kingstone, A. (2016). Temporal Methods for Eye Movement Analysis, in: C. Klein & U. Ettinger (Eds.) *An Introduction to the Scientific Foundations of Eye Movement Research and its Applications*, Springer, in press.

Annett, M., Anderson, F., and Bischof, W. F. (2015). Activities and Evaluations for Technology-based Upper Extremity Rehabilitation, in: F. Hu, J. Lu, and T. Zu (Eds.) Virtual Reality Enhanced Robotic Systems for Disability Rehabilitation, Hershey, PA: IGI Global, in press.

Anderson, F., and Bischof, W. F. (2014). Augmented reality improves myoelectric prosthesis training. In P. M. Sharkey and J. Merrick (Eds.) Virtual Reality: Rehabilitation in Motor, Cognitive and Sensorial Disorders (pp. 81-94), New York: Nova Science Publishers.

Dankers, A. A., Barnes, N., Bischof, W. F. and Zelinsky, A. (2009). Humanoid vision resembles primate archetypes [extended version]. In B. Siciliano, O. Khatib, & F. Groen (Eds.) Experimental Robotics (pp. 495-504), Heidelberg/Berlin: Springer.

Kingstone, A., Smilek, D., Birmingham, E., Cameron, D., and W.F. Bischof (2005). Cognitive ecology: Giving real life to attention research. In J. Duncan, L. Phillips & P. McLeod (Eds.) Speed, Control & Age: In Honour of Patrick Rabitt (pp. 341-357). Oxford: Oxford Press.

Caelli, T. and Bischof, W. F. (1997). The Role of Machine Learning in building image interpretation systems. In Caelli, T., P. Lam and H. Bunke (Eds.) Spatial Computing (pp.143-168). Singapore: World Scientific.

Caelli, T. and Bischof, W. F. (1997). An overview and perspective of image interpretation. In Caelli, T. and Bischof, W. F. (Eds.) Machine Learning and Image Interpretation (pp. 1-16). New York: Plenum Press.

Lai, S. M., Li, X., and Bischof, W. F. (1989). Automated detection of breast tumors. In A. Krzyzak, T. Kasvand, and C. Y. Suen (Eds.) Computer Vision and Shape Recognition (pp. 115-132). Singapore: World Scientific.

Groner, R., Groner, M., and Bischof, W. F. (1983). The role of heuristics in decision making. In R. Scholtz (Ed) Decision Making under Uncertainty (pp. 87-108). Amsterdam: North-Holland.

Groner, M., Groner, R., and Bischof, W. F. (1982). Approaches to heuristics: A historical review. In Groner, R., Groner, M., and Bischof, W. F. (Eds.) Methods of Heuristics (pp. 1-18). Hillsdale, NJ: Lawrence Erlbaum.

Bischof, W. F. (1981). Neuere Ansätze der Sprachanalyse in der Künstlichen Intelligenz. In K. Foppa and Groner, R. (Eds.) Kognitive Strukturen und ihre Entwicklung (pp. 344-369). Bern: Hans Huber.

Bischof, W. F. (1976). Psychology of language and memory. In E. Charniak and Y. Wilks (Eds.) Computational Semantics, Amsterdam: North-Holland.

## **Books and Special Editions**

Bischof, W. F., Ferraro, M., and Rentschler, I. (Eds.) (2009). Special Edition of Spatial Vision in Honor of Terry Caelli, 22(5), 357-359.

Rentschler, I., Caelli, T., Bischof, W., and Jüttner, M. (Eds.) (2000). Special Edition of Spatial Vision on Object Recognition and Image Understanding by Brain and Machines. *Spatial Vision*, 13, No 2-3.

Caelli, T. and Bischof, W. F. (Eds.) (1997) *Image Interpretation Systems*. New York: Plenum.

Groner, R., Groner, M. T., and Bischof, W. F. (Eds.) (1982). *Methods of Heuristics*. Hillsdale, NJ: Lawrence Erlbaum.

### **Conference and Workshop Presentations**

Bischof, W. F., Solman, G., and Groner, M. (2015). Generalized Recurrence Analysis of Eye Movements. European Conference on Eye Movements, Vienna, August 16-21, *Journal of Eye Movement Research*, 8(4), 63.

Street, C. N. H., Bischof, W. F., Vadillo, M., and Kingstone, A. (2015). Why we believe more than disbelieve: an error or a smart move? Symposium IX of the Society for Applied Research in Memory and Cognition, Victoria, B.C., Canada, 24-27 June 2015.

Furlan, R. M. M. M., Santana, G. A., Silva, C. N., Motta, A. R., Bischof, W. F., and Las Casas, E. B. (2014). Novo método para reabilitação da força e da mobilidade da língua associado a jogos digitais. Poster presented at the 22º Congresso Brasileiro de Fonoaudiologia, Joinville, SC, Brazil, October 8-11.

Furlan, R. M. M. M., Santana, G. A., Silva, C. N., Motta, A. R., Bischof, W. F., and Las Casas, E. B. (2014). New method for rehabilitation of tongue strength and mobility. Poster presented at the 7<sup>th</sup> World Congress of Biomechanics, Boston, July 6-11.

Snyder, J. J., and Bischof, W. F. (2013). Inhibition of return in everyday search. Poster presented at the 54th Annual Meeting of the Psychonomic Society, Toronto, November 14-16, 210.

Snyder, J. J., and Bischof, W. F. (2013). Looking for the key to inhibition of return in everyday search. *Proceedings of the Canadian Society for Brain, Behaviour and Cognitive Science*, Calgary, June 7-9, p. 17.

Bischof, W. F., Anderson, N. C., Dalrymple, K. A., and Kingstone, A. (2013). Recurrence Quantification Analysis of Abnormal Eye Movement Behaviour. European Conference on Eye Movements, Lund, August 11-16, *Journal of Eye Movement Research*, 6(3), 112.

Anderson, N. C., Anderson, F., Bischof, W. F., and Kingstone, A. (2013). Scanpath comparison methods: Compared. European Conference on Eye Movements, Lund, August 11-16, *Journal of Eye Movement Research*, 6(3), 113.

Walker, E. J., Bischof, W. F., and Kingstone, A. (2013). Take my hand: The temporal and spatial coordination of handshaking. Joint Action Meeting of the Cognitive Science Society, Berlin, July 27-29, Online Proceedings.

Anderson, F., Annett, M., and Bischof, W. F., Tabletops in Motion: The Kinetics and Kinematics of Interactive Surface Physical Therapy. Proceedings of the 2012 CHI Extended Abstracts, 2351-2356.

Chisholm, J., Bischof, W. F., and Kingstone, A. (2011) The Effect of Providing Context to Distractors in Visual Search, Poster presented at the 52<sup>nd</sup> Annual Meeting of the Psychonomic Society, Seattle, USA, Nov 3-6, 2011.

Anderson, N., Risko, E., Bischof, W.F., and Kingstone, A. (2011). Motion and geometry in gaze discrimination, Poster presented at the 52<sup>nd</sup> Annual Meeting of the Psychonomic Society, Seattle, USA, Nov 3-6, 2011.

Anderson, F., Annett, M., and Bischof, W.F. (2010). Lean on Wii: Physical Rehabilitation with Virtual Reality and Wii Peripherals. Paper presented at the 15th Annual CyberPsychology and CyberTherapy Conference, Seoul, Korea, June 13-15, 2010.

Annett, M., Anderson, F., and Bischof, W.F. (2010). Hands, Tables, and Groups Make Rehabilitation Awesome! Paper presented at the 15th Annual CyberPsychology and CyberTherapy Conference, Seoul, Korea, June 13-15, 2010.

Anderson, F., Annett, M., Bischof, W.F., and Boulanger, P. Virtual Equine Assisted Therapy. Poster presented at the IEEE Conference Virtual Reality 2010, 255 - 256.

Annett, M. K., Anderson, F., D. Goertzen, J. Halton, Q. Ranson, Bischof, W. F. and Boulanger, P. (2009). Using a Multi-touch Tabletop for Upper Body Motor Rehabilitation, Paper presented at the 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group (CHISIG) of the Human Factors and Ergonomics Society of Australia, 261 - 264.

Radzikowska, M., Ruecker, S., Bischof, W.F., Annett, M., and Forbes, F. (2009). Sprockets for Gears: Decision Support Visualization for Manufacturing Systems. Paper presented at the 2009 Chicago Colloquium on Digital Humanities and Computer Science.

Dalrymple, K. A., Birmingham, E., Bischof, W. F., Barton, J. J. S. and Kingstone, A. (2009). Seeing the world in pieces: How do simultanagnosics scan social scenes and why? Poster presented at the 50th Meeting of the Psychonomic Society, Boston, MA., Nov 19-22, Abstracts of the Psychonomic Society, No 4168.

Snyder, J. J. and Bischof, W. F. (2009). Assessing Cognitive Flexibility in Older Adults Using Multiple Location Inhibition of Return. Poster presented at the 50th Meeting of the Psychonomic Society, Boston, MA., Nov 19-22. Abstracts of the Psychonomic Society, No. 4070.

Radzikowska, M., Ruecker, S., Bischof, W. F., Annett, M. K. and Forbes, F. (2009) Sprockets for Gears: Interactive Decision Support Visualization for Multi-Modal Industries. 2009 Chicago Colloquium on Digital Humanities and Computer Science, (in press, accepted Sept 2009).

Dalrymple, K. A., Birmingham, E., Bischof, W. F., Barton, J. J. S., and Kingstone, A. (2009). Seeing the world in pieces: How do simultanagnosics scan social scenes and why? Poster presented at the NorthWest Cognition and Memory (NOWCAM 2009) Conference, May 14-16, Victoria, Canada.

Snyder, J. J. and Bischof, W. F. (2009). The Role of the Ventral Pathway in Determining Heading. Tennen: Annual Meeting of Theoretical & Experimental Neuropsychology, June 11-13, Montreal, Canada.

- Annett, M. K. and Bischof, W. F. (2009). A user-friendly VR system for research on spatial navigation: The SNaP framework. Poster presented by MKA at the Google Cohort Conference.
- Annett, M. K. and Bischof, W. F. (2009). VR for Everybody: The SNaP Framework. Paper presented (by MKA) at the 2nd Workshop on Software Engineering and Architectures for Realtime Interactive Systems (SEARIS), March 14-18, Lafayette, USA.
- O. Gómez, H. Trefftz, Boulanger, P., and Bischof, W. F. (2009). Collaborative data exploration using two navigation strategies. Poster presented at the 3D User Interfaces (3DUI 2009), Lafayette, USA, March 14-15.
- Dankers, A. A., N. Barnes, Bischof, W. F. and A. Zelinsky (2008). Humanoid vision resembles primate archetypes. Paper presented (by AAD) at the 11th International Symposium on Experimental Robotics 2008 (ISER '08), Athens, Greece, July 14-17 2008.
- Cheng, L., Zhou, J., Bischof, W. F. (2008). Online Prediction and Change Detection with Application to Interactive Road Tracking. Paper presented (by LC) at the AAAI-08 Conference, Chicago, USA, July 13-17.
- Yang, X. D., Bischof, W. F. and Boulanger, P. (2008). The effects of hand motion on the haptic perception of force direction. Paper presented (by XDY) at Eurohaptics, Madrid, Spain, June 10-13.
- Tipper, C., Bischof, W. F. and Kingstone, A. (2008). Visual Orienting to Behaviorally Relevant Information in Dynamic Scene, Poster presented at Neuroscience 2008, Washington, DC, USA, November 15-19.
- Bischof, W. F., Yang, X. D., and Boulanger, P. (2008). Perception of Haptic Forces. Paper presented at the 18th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, University of Western Ontario, London, Canada, June 23-26, Abstracts, p. 66.
- Snyder, J. J., Visser, T. A. W., Gordon, R., and Bischof, W. F. (2007). Voluntary Orienting Modulates Multiple Location Inhibition of Return. Poster presented at the 48th Meeting of the Psychonomic Society, Long Beach, California. Abstracts of the Psychonomic Society, p. 57.
- Dalrymple, K. A., Bischof, W. F., Cameron, D., Barton, J. J. S. and Kingstone, A. (2007). Inefficient eye movements correlate with difficulties in perceiving global stimuli in Balint's syndrome. Poster presented at the Annual Meeting of the Vision Sciences Society VSS07, Sarasota, May 11-16, Journal of Vision, 7, p. 23a.
- Zhou, J., Bischof, W. F. and Sanchez-Azofeifa, A. (2006). Extracting lines in noisy images using directional information. Poster presented at the 18<sup>th</sup> International Conference on Pattern Recognition, Hong Kong, August 20-24.
- Zhou, J., Cheng, L. and Bischof, W. F. (2006). A novel learning approach for semi-automatic road tracking. Paper presented (by JZ) at the Workshop on Pattern Recognition in Remote Sensing. Hong Kong, August 20, 2006.
- Snyder, J. J. and Bischof, W. F. (2006). Static cues for the perception of heading. Paper presented (by JJS) at the 16th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Saskatoon, Canada, June 22-24, Abstracts p. 49.



Kelly, D. M. and Bischof, W. F. (2006). A comparative examination of spatial cues in place finding tasks. Paper presented (by DMK) at the 16th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Saskatoon, Canada, June 22-24, Abstracts p. 49.

Bischof, W. F. and Kelly, D. M. (2006). Navigation and Localization in open environments. Paper presented (by WFB) at the 16th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Saskatoon, Canada, June 22-24, Abstracts p. 49.

Birmingham, E., Yanko, M., Barresi, J., Bischof, W. F. and Kingstone, A. (2006). The role of attention in complex event perception. Paper presented (by EB) at the 16th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Saskatoon, Canada, June 22-24, Abstracts p. 36.

Tipper, C., Bischof, W. F., Kingstone, A. and Handy, T. (2006). Attention and eye movements during navigation. Paper presented (by CT) at the 16th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Saskatoon, Canada, June 22-24, Abstracts p. 50.

Birmingham, E., Bischof, W. F. and Kingstone, A. (2006). Using the eyes to encode social scenes. Poster presented at the ETRA 2006 Symposium on Eye Tracking Research & Applications, San Diego, USA, Mar 27-29, Abstracts p. 36.

Kelly, D. M. and Bischof, W. F. (2006). Influence of Features and Geometry on Goal-Directed Search Behavior in Virtual Environments. Paper presented (by DMK) at the 13<sup>th</sup> International Conference of Comparative Cognition, Melbourne, Florida, Mar 22-25, <http://www.pigeon.psy.tufts.edu/ccs/Proceedings2006/Talks.htm>

Caelli, T., Zhou, J. and Bischof, W. F. (2005). A Human-Computer Interaction Framework for Cartographic Map Revision. OCET SET/SOCET GXP Asia-Pacific User Conference, Cairns, Australia, Oct 23-26.

Bischof, W. F., Birmingham, E. and Kingstone, A. (2005). Modeling the Influence of Top-Down Mechanisms on Fixation Behavior. Paper presented at the 13th European Conference on Eye Movements, Bern, Switzerland, Aug 14-18, Journal of Eye Movement Research, 1, 25.

Birmingham, E., Yanko, M., Bischof, W. F. and Kingstone, A. (2005). Context Effects on the Visual Scanning of Social Scenes. Poster presented at the 13th European Conference on Eye Movements, Bern, Switzerland, Aug 14-18, Journal of Eye Movement Research, 1, 46.

Bischof, W. F. and Kelly, D. M. (2005). Reorienting and Navigation in Open Environments. Paper presented at the 15th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Montreal, Canada, July 14-17, Abstracts p. 145.

Kelly, D. M. and Bischof, W. F. (2005). Influence of Environmental Shape on the Encoding of Featural and Geometric Information. Paper presented (by DMK) at the 15th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Montreal, Canada, July 14-17, Abstracts p. 145.

Snyder, J. J. and Bischof, W. F. (2005). Perception of egomotion from static image information. Paper presented (by JJS) at the 15th Annual Meeting of the Canadian

Society for Brain, Behaviour and Cognitive Science, Montreal, Canada, July 14-17, Abstracts p. 71.

Birmingham, E., Yanko, M., Smilek, D., Bischof, W. F. and Kingstone, A. (2005). How does context influence social attention in real world scenes? Poster presented at the 15th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Montreal, Canada, July 14-17, Abstracts p. 99.

Fairburn, N., Chapman, C., Bischof, W. F., Smilek, D. and Kingstone, A. (2005). Redefining perspective: An application of cognitive ethology. Poster presented at the 12th Annual Cognitive Neuroscience Society (CNS) Meeting, New York. April 10-12, Abstracts p. 203.

Tipper, C., Bischof, W. F. and Handy, T. (2005). Attending to a dynamic world: Influences of the optic flow field on visuospatial attention and the P1 ERP component. Poster presented at the 12th Annual Cognitive Neuroscience Society (CNS) Meeting, New York. April 10-12, Abstracts p. 187.

Snyder, J. J. and Bischof, W. F. (2005). Multiple Brain Pathways Mediating the Perception of Egomotion. Poster presented at the 12th Annual Cognitive Neuroscience Society (CNS) Meeting, New York. April 10-12, Abstracts p. 148.

Birmingham, E., Smilek, D., Bischof, W. F. and Kingstone, A. (2005). Cognitive ethology and social attention in real world scenes. Poster presented at the 12th Annual Cognitive Neuroscience Society (CNS) Meeting, New York. April 10-12, Abstracts p. 19.

Kelly, D. M. and Bischof, W. F. (2004). Influence of environmental characteristics on orienting. Poster presented at the 14th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, St. John's, Canada, June 12-14, Abstracts, p. 43.

Kelly, D. M. and Bischof, W. F. (2003). Orienting and re-orienting using geometric and featural cues. Poster presented at the 44th Meeting of the Psychonomic Society, Vancouver, Canada. Abstracts of the Psychonomic Society.

Giesbrecht, B., Bischof, W. F. and Kingstone, A. (2003). Seeing the light: Adapting luminance reveals low-level visual processes in the attentional blink. Poster presented at the 14th Annual meeting of Theoretical and Experimental Neuropsychology (TENNET XIV), Montreal, Canada.

Kelly, D. M. and Bischof, W. F. (2003). When you are not where you think you are: Reorienting in navigation. Poster presented at the 13th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, Hamilton, Canada, June 12-14, Abstracts p. 49.

Friesen, C., Borowsky, R., Cheesman, J., and Bischof, W. F. (2003). Can Gaze-Triggered Orienting Occur Without Awareness? Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, New York. Cognitive Neuroscience Society Abstracts, 10, 124.

Kelly, D. M. and Bischof, W. F. (2002). Landmark encoding in humans and pigeons. Poster presented at the 43rd Meeting of the Psychonomic Society, Kansas City, USA. Abstracts of the Psychonomic Society, 7, 41.

Kelly, D. M. and Bischof, W. F. (2002). Does visibility influence owl peering behavior? Studies with short-eared owls (*Asio flammeus*) and northern saw-whet owls

(Aegolius acadicus). Paper presented (by DMK) at the International Conference of Comparative Cognition, Melbourne, Florida,  
<http://www.pigeon.psy.tufts.edu/ccs/proceedings02.htm>

Visser, T. A. W., Birmingham, E., Bischof, W. F., Snyder, J. J., and Kingstone, A. (2001). Inhibition of Return is Strategic in Nature. Poster presented at the 42nd Meeting of the Psychonomic Society, Orlando, USA. Abstracts of the Psychonomic Society, 6, 41.

Friesen, C. K., Bischof, W. F. and Kingstone, A. (2001). Reflexive attention to gaze direction with masked gaze cues. Paper presented (by CKF) at the Joint Meeting of the Experimental Psychology Society and the Canadian Society for Brain, Behaviour and Cognitive Science, Quebec City, Abstracts p. 78.

Dukewich, K., Friesen, C. K. and Bischof, W. F. (2001). The influence of non-predictive gaze in a visual search paradigm. Poster presented at the Joint Meeting of the Experimental Psychology Society and the Canadian Society for Brain, Behaviour and Cognitive Science, Quebec City, Abstracts p. 24.

Bischof, W. F. and Caelli, T. (2001). On the learning of complex movement sequences. Paper presented at the 4th International Workshop on Visual Form, Capri, Italy, May 28-30, 2001.

Bischof, W. F. and Caelli, T. (2001). Learning complex action patterns with CRGst. Paper presented at the International Conference on Advances in Pattern Recognition ICAPR'2001, Rio, Brazil, March 11-14, 2001.

Kelly, D. M., Spetch, M. L., Wong-Wylie, D. R., and Bischof, W. F. (2001). Differences in the detection of random dot patterns by pigeons and humans. Paper presented (by DMK) at the International Conference of Comparative Cognition, Melbourne, Florida.

Visser, T. A. W. and Bischof, W. F. (2000). T1-difficulty and attentional blink: We interrupt this processing to bring you an account. Poster presented at the 41st Meeting of the Psychonomic Society, New Orleans, USA. Abstracts of the Psychonomic Society, 5, 93.

Bischof, W. F. and Caelli, T. (2000). Learning actions: Induction over spatio-temporal relational structures - CRGst. Paper presented at the Workshop on Machine Learning in Computer Vision. 14th European AI Conference, Berlin, Germany, August 20-25.

Bischof, W. F. and Caelli, T. (2000). Parallel techniques for rule-based scene interpretation. Paper presented at the 8th international workshop on Syntactical and Structural Pattern Recognition & Statistical Pattern Recognition SSPR2000, Alicante, Spain, Aug 30-Sep 1, 2000.

Friesen, C. K., Bischof, W. F. and Kingstone, A. (2000). The effects of face inversion on reflexive attention to gaze direction. Poster presented at the Joint Meeting of the Experimental Psychology Society and the Canadian Society for Brain, Behaviour and Cognitive Science, Cambridge, UK. Conference Abstracts, 57.

Friesen, C. K., Moore, C., Bischof, W. F. and Kingstone, A. (2000). Does gaze direction produce a reflexive attentional shift without inhibition of return. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, USA. Supplement of the Journal of Cognitive Neuroscience, 90.

- Giesbrecht, B., Bischof, W. F. and Kingstone, A. (1999). Masking in the attentional blink: Failure of the object substitution hypothesis. Poster presented at the 40th Meeting of the Psychonomic Society, Los Angeles, USA. Abstracts of the Psychonomic Society, 4, 3.
- Di Lollo, V., Visser, T. A. W., Kawahara, J.-I., and Bischof, W. F. (1999). Changing the guard: Temporal dynamics of attentional switching. Paper presented (by VDL) at the 40th Meeting of the Psychonomic Society, Los Angeles, USA. Abstracts of the Psychonomic Society, 4, 30.
- Cabeza, R., Rao, S. M., Wagner, A. D., Bischof, W. F. and Schacter, D. L. (1999). Recognition and source memory of true and false items: An event-related fMRI study. Paper presented at the Meeting of the Neuroscience Society, Miami Beach, USA. Society for Neuroscience Abstracts, 25, 1553.
- Bischof, W. F., Cabeza, R., Kiss, I., and Rugg, M. D. (1999). Event-related potentials (ERPs) of recognition memory: Effects of confidence. Poster presented at the Meeting of the Neuroscience Society, Miami Beach, USA. Society for Neuroscience Abstracts, 25, 648.
- Bischof, W. F., Cabeza, R. and Rugg, M. D. (1999). Effects of confidence on the electrophysiological markers of recognition memory. Poster presented at Meeting of the Canadian Society for Brain, Behavioural and Cognitive Science (CSBBCS), Edmonton.
- Cabeza, R., Rao, S. M., Wagner, A., Bischof, W. F. and Schacter, D. (1999). Neural Correlates of true and false recognition memory: An event-related fMRI study. Poster presented at the Meeting of Canadian Society for Brain, Behavioural and Cognitive Science (CSBBCS), Edmonton.
- Giesbrecht, B., Kingstone, A. and Bischof, W. F. (1999). The attentional blink: visual masking by object substitution. Paper presented (by BLG) at the Meeting of the Canadian Society for Brain, Behavioural and Cognitive Science (CSBBCS), Edmonton.
- Bischof, W. F. (1999). Learning to recognize objects. Paper presented at the International Workshop on Visual Object Recognition by Humans and Machines, Bad Homburg, Germany.
- Bischof, W. F., T. A. Visser and Di Lollo, V. (1999). Integrating the Attentional-Blink Deficit and Flanker interference. Poster presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Fort Lauderdale, USA. Investigative Ophthalmology and Visual Science, 40, S48.
- Cabeza, R., Rao, S. M., Wagner, A., Bischof, W. F. and Schacter, D. (1999). Event-related FMRI of veridical and illusory recognition memory. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Washington, USA. Supplement of the Journal of Cognitive Neuroscience, 18.
- Bischof, W. F., Cabeza, R., Kiss, I., and Rugg, M. D. (1999). Event-related potentials of recognition memory: Modulatory effects of confidence. Supplement of the Journal of Cognitive Neuroscience, 22.
- Bischof, W. F. and Kingstone, A. (1999). Grouping by motion phase and velocity. Paper presented (by WFB and AK) at the 13th Royce Conference, Edmonton.

- Visser, T. A. W., Bischof, W. F. and Di Lollo, V. (1998). Spatial Switching in the Attentional Blink. Poster presented at the 39th Meeting of the Psychonomic Society, Dallas, USA. Abstracts of the Psychonomic Society, 3, 27.
- Giesbrecht, B., Bischof, W. F. and Kingstone, A. (1998). The attentional blink: What do we see in the dark, Poster presented at the 39th Meeting of the Psychonomic Society, Dallas, USA. Abstracts of the Psychonomic Society, 3, 26.
- Bischof, W. F., Visser, T. A. W. and Di Lollo, V. (1998). Items in attended spatial locations are immune to the attentional blink. Paper presented (by WFB) at the Meeting of the Canadian Society for Brain, Behavioural and Cognitive Science (CSBBCS), Ottawa.
- Bischof, W. F. (1998). Moving from low- to high-level perception. Paper presented at the Conference of the Canadian Psychological Association (CPA), Edmonton.
- Bischof, W. F. and Kingstone, A. (1998). How is visual search affected by target and distractor motion? Paper presented (by WFB and AK) at the 12th Royce Conference, Edmonton.
- Bischof, W. F. (1996). Conditional Rule Generation. Workshop on Machine Learning, Sydney, Australia.
- Bischof, W. F. and Caelli, T. (1995). Learning how to find patterns or objects in complex scenes. Paper presented (by WFB) at the 8th International Conference on Image Analysis and Processing, San Remo, Italy.
- Bischof, W. F. and Di Lollo, V. (1995). Psychophysical evidence of a sustained input to directionally selective motion mechanisms. Poster presented at the 15th European Conference on Visual Perception (ECVP), Tübingen, Germany. Perception, 24, Supplement, 100.
- Di Lollo, V. and Bischof, W. F. (1995). The inverse intensity-effect in duration of visible persistence. Paper presented (by WFB) at the 15th European Conference on Visual Perception (ECVP), Tübingen, Germany. Perception, 24, Supplement, 25.
- Bischof, W. F. and Di Lollo, V. (1995). On motion and metacontrast with simultaneous onset of the stimuli. Paper presented (by WFB) at the 9th Royce Research Conference, Edmonton.
- Di Lollo, V. and Bischof, W. F. (1995). The inverse intensity effect in duration of visible persistence. Paper presented (by VDL) at the 9th Royce Research Conference, Edmonton.
- Caelli, T. and Bischof, W. F. (1994). The role of machine learning in building image interpretation systems. Paper presented (by WFB) at the Australian Pattern Recognition Society - WA Chapter, Perth, Australia.
- Bischof, W. F. and Caelli, T. (1994). Visual learning of patterns and objects. Paper presented (by WFB) at the 8th Royce Research Conference, Edmonton.
- Di Lollo, V. and Bischof, W. F. (1991). Integration of motion signals from individual sensors. Paper presented (by WFB) at the Meeting of the Canadian Society for Brain, Behavioural and Cognitive Science (CSBBCS), Calgary.
- Bischof, W. F. (1991). Towards a theory of motion integration. Paper presented at Basics'91, Banff. Canadian Psychology, 32, 644-645.

- Bischof, W. F. and Di Lollo, V. (1990). On the half-cycle limit of apparent motion. Paper presented (by WFB) at the 5th Royce Research Conference, Edmonton.
- Di Lollo, V. and Bischof, W. F. (1990). Displacement limit ( $d_{max}$ ) of sampled directional motion: direct and indirect estimates. Paper presented (by VDL) at the 5th Royce Research Conference, Edmonton.
- Bischof, W. F. and Di Lollo, V. (1989). Perception of directional motion II: Modelling. Paper presented (by WFB) at the 4th Royce Research Conference, Edmonton.
- Di Lollo, V. and Bischof, W. F. (1989). Perception of directional motion I: Psychophysics. Paper presented (by VDL) at the 4th Royce Research Conference, Edmonton.
- Bischof, W. F. and Ferraro, M. (1988). Curved Mondrians: A generalized approach to shape from shading. Paper presented (by WFB) at the Conference of the Canadian Society for Computational Studies of Intelligence, Edmonton.
- Bischof, W. F. (1987). On shape inference. Paper presented at the 2nd Royce Research Conference, Edmonton.
- Bischof, W. F. (1987). Paper presented at the Conference on Human and Machine Pattern Recognition, Kingston.
- Bischof, W. F. (1986). Paper presented at the Meeting of the Experimental Psychology Society (EPS), Keele, England.
- Bischof, W. F. (1985). Visual recognition and discrimination of random-dot patterns. Paper presented at the Meeting of the Experimental Psychology Society (EPS), Cambridge, England.
- Bischof, W. F. (1984). Paper presented at the Meeting of the Swiss Group for Artificial Intelligence, Geneva, Switzerland.
- Bischof, W. F. and Groner, M. (1983). Apparent motion beyond the displacement limit: An analysis of short-range processes. Paper presented (by WFB) at the 6th European Conference on Visual Perception (ECVP), Lucca, Italy. *Perception*. 12, A15.
- Bischof, W. F. (1983). Ueber zwei Mechanismen der Bewegungswahrnehmung. Paper presented at the Forschertagung der Schweizerischen Gesellschaft für Psychologie, Zürich, Switzerland.
- Bischof, W. F., Fisch, H.-U., Groner, M., Groner, R. and Menz, C. (1981) The analysis of eye movements and other real-time variables of human information processing under small doses of different drugs. Paper presented at the Conference of the European Group for Eye Movement Research, Bern, Switzerland.
- Bischof, W. F. (1979). Paper presented at the 21st Tagung experimentell arbeitender Psychologen, Apr 9-12, Heidelberg, Germany.
- Bischof, W. F. (1975). Psychology of language and memory. Tutorial on Computational Semantics, Lugano, Switzerland.

## Other contributions

Annett, M., Halton, J., Goertzen, D., Ranson, Q., Raso, J., Bischof, W.F. (2010). Reach out and touch me! Increasing client motivation using multi-touch tabletops. Poster at the Glenrose Rehabilitation Hospital Spotlight on Research Breakfast.

Sheil, D., Anderson, F., Annett, M., Bischof, W., Boulanger, P. (2009) Interactive Rehabilitation Through Gaming, Poster at High School Internship Program Poster Session.

Koetter, E., Anderson, F., Annett, M., Bischof, W., Boulanger, P. (2009) A Virtual World for Equine Assisted Therapy, Poster at High School Internship Program Poster Session.

Chan, M., Anderson, F., Annett, M., Bischof, W., Boulanger, P. (2009) Engaging Apps For Rehabilitation: Guaranteed to Keep Your Arms “Busy” and “Moving”!, Poster at UofA Women in Scholarship Science, Engineering and Technology Program Celebration of Research.

Cheek, B., Anderson, F., Annett, M., Bischof, W., and Boulanger, P. (2009) Virtual “Wiiality” for Rehabilitation, Poster at UofA Women in Scholarship Science, Engineering and Technology Program Celebration of Research.

Hall, M., Bischof, W., Annett, M., Anderson, F., (2008) Authoring Virtual Environments for Spatial Navigation Studies, Poster at UofA Women in Scholarship Science, Engineering and Technology Program Celebration of Research.

Dankers, A. A., Barnes, N., Bischof, W. F. and Zelinsky, A. (2007). On Real-Time Synthetic Primate Vision, Nature Precedings, <http://hdl.handle.net/10101/npre.2007.1241.1>

Adler, R. (2006). Software learns cartography by watching mapmakers, New Scientist Tech, [http://technology.newscientist.com/article.ns?id=dn10404&feedId=tech\\_rss20](http://technology.newscientist.com/article.ns?id=dn10404&feedId=tech_rss20)

Bischof, W. F. and Groner, M. T. (1983). Analyse visueller Wahrnehmungsprozesse, Informatikum der Universität Bern, 1, 16-19.

Bischof, W. F. (1982). Theorien der Künstlichen Intelligenz als psychologische Theorien. University of Bern, Switzerland, unpublished Ph.D. Thesis.

Groner, R., Bischof, W. F., and Groner, M. T. (1980). Heuristik - die Wissenschaft vom Problemlösen. Unipress, Berichte über Forschung und Wissenschaft an der Universität Bern, 2, 4-15.

Last updated: May 30, 2016