JAMES H. ELDER, PH.D., P.ENG.
Professor & York Research Chair in Human and Computer Vision
York University

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Year of Birth	1964	**Email**	jelder@yorku.ca
Citizenship	Canadian	**WWW**	www.yorku.ca/jelder www.elderlab.yorku.ca

PROFILE

My research is deeply interdisciplinary: I seek to understand the computational processes underlying human vision, and to develop better machine vision systems based on this understanding. I have been awarded (as Principal Investigator) more than $13M in direct external research funding to support this research program, including most recently a 5-year $4M collaborative ORF-RE grant and a 6-year $1.6M NSERC CREATE training grant. I am also a founding Co-Director of a new York University research centre called the Centre for AI & Society (CAIS).

I have trained more than 145 graduate and undergraduate research students and postdoctoral fellows, and with them and other colleagues have published more than 90 papers in high-impact international journals, conferences and books, generating more than 8,600 citations. Ten of my former trainees are now in faculty positions in Canada, the US, Australia, France and China. Most of the others are now in leadership positions in the technology industries.

The impact of my research has been recognized by a Premier's Research Excellence Award, a Lassonde Innovation Award, appointments to editorial boards for four international journals, and recent keynote talks at conferences and workshops in the US, China, the UK and Canada. Since 2018 I have held the York Research Chair in Human and Computer Vision.

My research involves close collaboration with Canadian companies and has seen application in 3D synthetic displays for helicopter navigation, highway traffic analytics and sports videography. Our public datasets have become standard global benchmarks for vision tasks (www.elderlab.yorku.ca/resources). We hold two patents on attentive sensing systems and have formed a startup to commercialize this technology (www.attentivevision.com).

EDUCATION

Ph. D. 1996

Institution	McGill University, Department of Electrical Engineering
Thesis Title	The visual computation of bounding contours

M. Eng. 1992

Institution	McGill University, Department of Electrical Engineering
Thesis Title	Contour closure and the perception of shape

B. A. Sc. 1987

Institution	University of British Columbia, Department of Electrical Engineering

HONOURS & AWARDS

2023-2028	York Research Chair (Tier I) in Human and Computer Vision, York University
2022	Lassonde Innovation Award – Established Researcher
2022	Asian Conference on Computer Vision – Outstanding Reviewer Award
2021	Stanford University Top 2% Researcher List
2020	Best Computer Vision Paper Award, Conference on Computer and Robot Vision
2020	York University Research Leader Award
2018-2023	York Research Chair (Tier I) in Human and Computer Vision, York University
2018	York University Research Leader Award
2015	York University Research Leader Award
2009	Professeur Invité, Université de Paris Dauphine & Fondation Sciences Mathématiques de Paris
2008	Poster Award, Gordon Conference on Sensory Coding and the Natural Environment
2003	Premier's Research Excellence Award, Ontario Ministry of Enterprise, Opportunity and Innovation
2001	Young Investigator Award, Canadian Image Processing and Pattern Recognition Society
1998	York University Release-Time Teaching Fellowship and Development Grant, for *Integrated disciplinary and computer training in an active learning environment*

1995	Postdoctoral Fellowship, Natural Sciences and Engineering Research Council (declined)
1995	Long-Term Postdoctoral Fellowship, International Human Frontier Science Program (declined)
1995	Best Paper Award, for the paper "Scale space surfaces and blur estimation," Vision Interface, Québec City, Québec
1994-1995	Postgraduate Scholarship, Fonds pour la Formation de Chercheurs et l'Aide à la Recherche (Québec)
1989-1994	Postgraduate Scholarship, Natural Sciences and Engineering Research Council
1989-1991	Postgraduate Scholarship, Bell-Northern Research

EMPLOYMENT

2018-	Professor & York Research Chair in Human and Computer Vision,	Department of Electrical Engineering & Computer Science Department of Psychology, York University
2012-2018	Professor,	Department of Electrical Engineering & Computer Science Department of Psychology, York University
2006-2012	Associate Professor,	Department of Computer Science & Engineering and Department of Psychology, York University
2001-2006	Associate Professor,	Department of Psychology, York University
1996-2001	Assistant Professor,	Department of Psychology, York University
1995-1996	Senior Research Associate, Computer Science Division, NEC Research Institute, Princeton, NJ	
1989-1995	Graduate Student, McGill University, Centre for Intelligent Machines, Department of Electrical Engineering	
1987-1989	Member of Scientific Staff, Bell-Northern Research, Ottawa, Ontario	

AFFILIATIONS

Founding Co-Director, Centre for AI & Society (CAIS), York University

Core Member, Vision: Science to Applications (VISTA), York University

Faculty Affiliate, Vector Institute for Artificial Intelligence

Member, Centre for Vision Research, York University

Member, Graduate Program in Electrical Engineering and Computer Science, York University

Member, Graduate Program in Psychology, York University

Member, Graduate Program in Digital Media, York University

Associate Member, Graduate Program in Mathematics & Statistics, York University

Licensed Professional Engineer, Professional Engineers Ontario

Senior Member, Institute for Electrical and Electronic Engineers (IEEE)

EXTERNAL RESEARCH GRANTS AND CONTRACTS (APPLIED)

2023-2024 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Alliance grant, The AirChair: Safe and efficient wheelchair convoys for airports **($151,212 over one year)**

EXTERNAL RESEARCH GRANTS AND CONTRACTS (AWARDED)

2023-2030 Core Member, Canada First Research Excellence Fund, *Connected Minds: Neural & Machine Systems for a Healthy, Just Society* **($105,000,000 over seven years)**

2022-2027 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Discovery Grant, *Human and machine perception of 2D and 3D shape from contour* **($275,000 over five years)**

2022-2024 Principal Investigator, Ministry of Transportation Ontario Highway Infrastructure Innovation Funding Program, *Reliable AI for video-based highway traffic understanding* **($145,308 over two years)**

2022-2023 Co-Investigator (with S. Rosenbaum), Canada Foundation for Innovation John R. Evans Leaders Fund Grant, *REIL: Realistic Environment Interaction Logistics* **($140,000 over 1 year)**

2020-2021 Principal Investigator, Canada Foundation for Innovation Exceptional Opportunities Fund - COVID, *Agile AI-Powered Autonomous Robotics for COVID-19 Disinfection* (**$275,000 over one year)**

2019-2023 Principal Investigator, University of Toronto Subcontract, *Detecting, Classifying and Tracking Vulnerable Road Users at Intersections with Deep Learning* **($444,771 over four years)**

2019-2022 Co-Investigator, Innovation for Defence Intelligence and Security (IDEaS) Contract, *SentryNet: Developing Trust between Soldiers, Civilians, and Robots* **($2,332,884 over three years)**

2018-2019 Principal Investigator, Innovation for Defence Intelligence and Security (IDEaS) Contract, *Real-Time Multiple Object Detection, Tracking and Modelling from Fixed and Airborne Platforms* **($199,024 over six months)**

2017-2024 Co-Investigator, Canada First Research Excellence Fund, *VISTA: Vision Science to Applications* **($33,338,000 over seven years)**

2017-2023 Principal Investigator, Ontario Research Fund - Research Excellence Award, *Intelligent Systems for Sustainable Urban Mobility* **($3,999,998 over five years)**

2016-2021 Co-Investigator, Ontario Research Fund - Research Excellence Award, *Big Data Research, Analytics, and Information Network (BRAIN) Alliance* **($4,000,000 over five years)**

2016-2018 Principal Investigator, Ministry of Transportation Ontario Highway Infrastructure Innovation Funding Program, *Automatic 3D Video Analytics for Traffic and Road Condition Assessment* **($138,786 over two years)**

2016-2018 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Idea to Innovation Grant, *Attentive Sensor for Dynamic Scene Analysis* **($124,156 over one year)**

2015-2021 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Collaborative Research and Training Experience, *Data Analytics & Visualization* **($1,650,000 over six years)**

2015-2020 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Discovery Grant, *Recurrent Computations for the Perceptual Organization of Shape* **($180,000 over five years)**

2015-2016 Principal Investigator, Ministry of Transportation Ontario Highway Infrastructure Innovation Funding Program, *Automatic 3D Traffic Analysis from Highway Video Data* **($61,919 over one year)**

2014-2015 Principal Investigator, Ontario Centres of Excellence VIP 1 Program, *DM&T – York CVAV License Plate Redaction Project* **($25,000 over one year).**

2014-2015 Principal Investigator, Ministry of Transportation Ontario Highway Infrastructure Innovation Funding Program, *Automatic 3D Traffic Analysis from COMPASS Highway Camera Data* **($50,625 over one year).**

2013-2014 Principal Investigator, NSERC Engage Grant, *Attentive Sensing for Sports Video Applications* **($25,000 over six months)**

2013-2014 Principal Investigator, NSERC Regional Opportunities Fund, *3D Urban Sustainability Workshop* **($3,000 over two months)**

2011-2017 Co-Investigator, Natural Sciences and Engineering Research Council (NSERC) Collaborative Research and Training Experience, *Vision Science and Applications* **($1,650,000 over six years)**

2011-2016 Co-Investigator, Ontario Research Fund - Research Excellence Award, *Centre for Innovation in Information Visualization and Data-Driven Design (CIVDDD)* **($3,844,826 over five years)**

2011 Principal Investigator, NSERC Engage Grant, *An Expert System for the Home Improvement Market Using Computer Vision: Feasibility Study* **($25,000 over six months)**

2010-2015 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Discovery Grant *Hierarchical systems for visual shape perception* **($210,000 over five years)**

2010-2013 Project Leader and Co-Investigator, Ontario Centres of Excellence Earth and Environmental Technologies (OCE-ETech), *Three-Dimensionalizing Surveillance Networks* ***($436,509 over three years)***

2009-2012 Project Leader and Co-Investigator, Geomatics for Informed Decisions (GEOIDE), *Three-Dimensionalizing Surveillance Networks* ***($727,500 over three years)***

2008-2009 Project Leader and Co-Investigator, Geomatics for Informed Decisions (GEOIDE) Pilot Project, *Three-Dimensionalizing Surveillance Networks* ***($50,000 over one year)***

2008-2009 Project Leader and Co-Investigator, Ontario Centres of Excellence Earth and Environmental Technologies (OCE-ETech), Pilot Project, *Three-Dimensionalizing Surveillance Networks* ***($25,000 over five months)***

2008-2009 Principal Investigator, DRDC Toronto Contract No. W7711-078119, R&D Real-time surveillance **($190,000 over one and a half years)**

2005-2008 Principal Investigator, Ontario Centres of Excellence Earth and Environmental Technologies (OCE-ETech), *Real-time visual surveillance for search and rescue and other security applications* **($240,000 over three years)**

2006 Principal Investigator,, subcontract by Array Systems Inc. for DRDC TIES Contract W7711-4-7924 Call-Up #9 **($45,000)**

2005-2010 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Discovery Grant *Visual computation of salient contours* **($154,000 over five years)**

2005-2009 Project Leader and Co-Investigator, Geomatics for Informed Decisions (GEOIDE), *Monitoring Changes to Urban Environments using Wireless Sensing Networks* **($510,000 over four years)**

2004-2005 Co-Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, with M. Jenkin (Project Leader, York) *A novel sensor to aid in distance learning* **($34,840)**

2004-2005 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Attentive Panoramic Sensing for Surveillance and Security* **($50,000)**

2004-2005 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Computational and Perceptual Research on Enhanced/Synthetic Vision Systems for Aircraft* **($30,000)**

2003-2008 Principal Investigator, Premier's Research Excellence Award, *From Edges to Objects: Visual Processing of Contours in Human and Machine* **($150,000 over five years)**

2003-2005 Co-Investigator, PRECARN University-Led Project, Monitoring of Extended Premises: Tracking Pedestrians Using a Network of Loosely Coupled Cameras **($400,000 over two years)**

2003-2004 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Attentive Panoramic Sensing for Surveillance and Security* **($55,042)**

2003-2004 Project Leader, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Computational and Perceptual Research on Enhanced/Synthetic Vision Systems for Aircraft* **($30,160)**

2003-2004 Co-Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, with M. Jenkin (Project Leader, York) *A novel sensor to aid in distance learning* **($34,840)**

2003-2004 Principal Investigator, Natural Resources Canada funding in support of GEOIDE Project **($25,000)**

2003 Principal Investigator, Short Term Fellowship, International Human Frontier Science Program Organization, *Perceptual organization and nonlinear processing in visual cortex* **($10,914)**

2002-2005 Project Leader and Co-Investigator, Institute for Robotics and Intelligent Systems (IRIS) Grant, with J. Clark (McGill) and J. Tsotsos (York), *Visual intelligence for surveillance and telepresence applications* **($600,000 over three years)**

2002-2005 Project Leader and Co-Investigator, Geomatics for Informed Decisions (GEOID) Grant, with D. Clausi (Waterloo), G. Edwards (Laval), F. Ferrie (McGill), J. Little (UBC), *Intelligent data fusion for aircraft navigation and disaster management* **($510,000 over three years)**

2001-2005 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Research Grant *Psychophysical and computational investigation of visual contour processing* **($116,000 over four years)**

2002-2003 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Attentive Panoramic Sensing for Surveillance and Security* **($47,650)**

2002-2003 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Computational and Perceptual Research on Enhanced/Synthetic Vision Systems for Aircraft* **($47,650)**

2002-2003 Co-Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, with M. Jenkin (Project Leader, York) *A novel sensor to aid in distance learning* **($37,859)**

2002-2003 Principal Investigator, Natural Resources Canada funding in support of GEOIDE Project **($25,000)**

2001-2004 Co-Investigator, NSERC Major Facilities Access Grant, with members of the York Centre for Vision Research, *Personnel Support for York's Centre for Vision Research* **($408,000)**

2001-2002 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Extraction of Features from Remote-Sensed Imagery for Search and Rescue Database* **($47,650)**

2001-2002 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Research and evaluation of attentional factors for telepresence and virtual reality technologies* **($15,910)**

2001-2002 Principal Investigator, Natural Resources Canada funding in support of GEOIDE Project **($16,000)**

2000-2001 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Extraction of Features from Remote-Sensed Imagery for Search and Rescue Database* **($50,000)**

2000-2001 Principal Investigator, CRESTech Core Program Funding, *Research and evaluation of attentional factors for telepresence and virtual reality technologies* **($20,000)**

2000-2001 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Project Opportunity Funding, *Feature classification and surface modelling for a search and rescue synthetic vision database using high resolution satellite imagery* **($20,000)**

2000-2001 Co-Investigator, NSERC Major Facilities Access Grant, with members of the York Centre for Vision Research, *Personnel Support for York's Centre for Vision Research* **($91,000)**

1999-2002 Project Leader and Co-Investigator, Geomatics for Informed Decisions (GEOIDE) Grant, with colleagues at Laval University, McGill University, The University of BC, and The University of Waterloo, *Extraction of Features from Remote-Sensed Imagery for Search and Rescue Database* **($585,000 over three years)**

1999-2002 Co-Investigator, Ontario Research and Development Challenge Fund (ORDCF), with members of the York Centre for Vision Research, *Improvements to the Centre for Vision Research at York University (***$228,000 over three years)**

1999-2002 Co-Investigator, Canada Foundation for Innovation (CFI) Institutional Innovation Grant, with members of the York Centre for Vision Research, *Active Sensory Processing in Real and Synthetic Environments* **($5,800,000 over three years)**

1999-2000 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Extraction of Features from Remote-Sensed Imagery for Search and Rescue Database* **($50,000)**

1999-2000 Project Leader, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, *Research and evaluation of attentional factors for telepresence and virtual reality technologies* **($20,000)**

1998-2002 Project Leader and Co-Investigator, Institute for Robotics and Intelligent Systems (IRIS) Grant, with colleagues at McGill University and York University, *Research and evaluation of attentional factors for telepresence and virtual reality technologies* **($480,000 over four years)**

1998-2001 Project Leader and Co-Investigator, CFI New Opportunities Grant, with L. Wilcox (York University), *Attentive 3D Visual Processing* **($454,500)**

1998-1999 Co-Investigator, Centre for Research in Earth and Space Technology (CRESTech) Core Program Funding, with Paul Shepherd, CRESTech, *Remote sensed data and perceptual factors for ESVS demonstrator project* **($50,000)**

1998-1999 Principal Investigator, Centre for Research in Earth and Space Technology (CRESTech) Project Opportunity Funding, *Research and evaluation of attentional factors for telepresence and virtual reality technologies* **($20,000)**

1998-1999 Project Leader and Co-Investigator, DND contract (With Paul Shepherd, CRESTech*), Remote sensed data and perceptual factors for ESVS demonstrator project* **($50,000)**

1997-2001 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Research Grant *Psychophysical and computational investigation of visual contour representations* **($107,500 over four years)**

1997-1998 Project Leader and Co-Investigator, DND/CRESTech Subcontract from University of Toronto (With Paul Shepherd, CRESTech), *Generation of Synthetic Images for ESVS* **($85,000)**

1997-1998 Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Equipment Grant *Equipment to establish laboratory for visual psychophysics and computational modeling* **($25,630)**

INTERNAL RESEARCH GRANTS

2023-2028 Principal Investigator, *York Research Chair (Tier 1) in Human and Computer Vision* **($125,000**)

2023-2025 Co-Investigator, VISTA Research Grant, *Visual and other cues to inform human/avatar interaction* **($50,000**, over two years)

2023-2024 PI, York University Sabbatical Fellowship **($15,000**, over one years)

2021-2024 Co-PI, Catalyzing Interdisciplinary Research Clusters Grant, *AI Systems: Engineering, Governance & Society* **($525,000**, over three years)

2022-2024 PI, VISTA Research Grant, *CleanBot: AI-Driven Autonomous Robotics for Disinfection of Clinical and Long-Term Care Environments* **($50,000**, over two years)

2020-2021 Co-Investigator, VISTA Research Grant, *HippoCompass: Using Artificial Intelligence to Help Older Adults Navigate* **($50,000**, already accounted for in external grant listed above)

2018-2023 Principal Investigator, *York Research Chair (Tier 1) in Human and Computer Vision* **($125,000**)

2018-2020 Project Leader, VISTA Research Grant, *Deep networks for assisted target detection in airborne search and rescue* **($50,000**, already accounted for in external grant listed above)

2018-2019 Project Leader, VISTA Prototype Grant, *Attentive Vision System for Video Curation* **($50,000**, already accounted for in external grant listed above)

2017-2019 Project Leader, VISTA Research Grant, *Depth from Shadows* **($50,000**, already accounted for in external grant listed above)

2015-2016 Co-Investigator, Big Data Research and Analytics Information Network (BRAIN), *Developing Tools for Visual Interactive Data and Pattern Analysis* **($20,000**, already accounted for in external grant listed above)

2015-2016 Research Team Lead, Centre for Innovation in Information Visualization and Data-Driven Design, *Dynamic Carbon Activity Mapping in Urban Environments* **($58,000**, already accounted for in external grant listed above)

2014-2015 Research Team Lead, Centre for Innovation in Information Visualization and Data-Driven Design, *Dynamic Carbon Activity Mapping in Urban Environments* **($60,833**, already accounted for in external grant listed above)

2013-2014 Research Team Lead, Centre for Innovation in Information Visualization and Data-Driven Design, *Dynamic Carbon Activity Mapping in Urban Environments* **($20,000**, already accounted for in external grant listed above)

2012-2013 Research Team Lead, Centre for Innovation in Information Visualization and Data-Driven Design, *Dynamic Carbon Activity Mapping in Urban Environments* **($25,000**, already accounted for in external grant listed above)

1997-1998 Principal Investigator, Faculty of Arts Special Computer Matching Grant **($1,800)**

1996 Principal Investigator, York University Faculty of Arts Research Grant, *Contour classification and texture coding of natural images* **($3,500)**

1996 Principal Investigator, York University Startup Funds **($20,000)**

RESEARCH CONTRIBUTIONS

Publication Summary

Number of citations (Google Scholar):	8,607
H-Index (Google Scholar):	30
Peer-Reviewed Journal Articles:	38
Peer-Reviewed Full Conference Papers:	52
Book Chapters:	4
Patents:	4

Publication venues are selected to maximize impact. In biological vision research, peer-reviewed journal papers are the primary mode for dissemination of research findings. However, due to the rapid pace of the computer vision field, peer-reviewed conference papers have become the primary mode of dissemination. Generally these conferences have impact matching or exceeding journals. Acceptance rates for these conferences average around 33%.

The tables below summarize the impact levels of the journals and computer vision conferences where we publish our work. In biological vision, journal impact is typically measured by impact factor, whereas in computer vision, it is measured by h5-index.

JCR Journal Impact

Impact Factor	Journal
24.3	IEEE Transactions on Pattern Analysis and Machine Intelligence
17.7	Psychological Bulletin
11.5	International Journal of Computer Vision
10.8	Current Biology
7.8	Annual Review of Vision Science
7.2	Pattern Recognition
6.7	Journal of Neuroscience
5.7	iScience
5.0	Scientific Reports
4.8	PLOS Computational Biology
3.1	ACM Transactions on Multimedia Computing, Communications and Applications
2.8	Image and Vision Computing
2.2	Journal of Vision
2.0	Journal of Intelligent and Robotic Systems
1.9	Vision Research
1.1	Perception
0.5	Geomatica

Computer Vision Conference Impact

Publication	Publication Type	h5-index (Google Scholar)
CVPR	Conference	389

ICCV	Conference	239
ECCV	Conference	186
CVPR Workshops	Conference	106
WACV	Conference	76
BMVC	Conference	75
ICIP	Conference	60
ACCV	Conference	46
CRV	Conference	18

List of Publications

Refereed Journal Articles

1. Wang, Y., Li, Y., Elder, J.H., Wu, R., Lu, H. (2023). Class-conditional domain adaptation for semantic segmentation. Under revision for *Computational Visual Media*. (IF: 4.1)

2. Wang, Y., Xu, J., Zhang, L., Li, Y., Elder, J.H., Lu, H. (2023). A uniform transformer-based structure for feature fusion and enhancement for RGB-D saliency detection. *Pattern Recognition*, 140, 109516. (IF: 7.2)

3. Anderson, M.D., Elder, J.H., Graf, E.W., Adams, W.J. (2022). The time-course of real-world scene perception: spatial and semantic processing. *iScience*, 25(12), 105633. (IF: 5.7)

4. Baker, N. & Elder, J.H. (2022). Deep learning models fail to capture the configural nature of human shape perception *iScience*, 25(9), 104913. (IF: 5.7)

5. Cavanagh, P., Casati, R. & Elder, J.H. (2021). Scaling depth from shadow offset. *Journal of Vision*, 21(12):11. (IF: 2.2)

6. Goettker, A., Pidaparthy, H., Braun, D.I., Elder, J.H. & Gegenfurtner, K.R. (2021). Hockey videos reveal contextual modulation of predictive eye movements. *Current Biology*. 31, R973-R992. (IF: 10.8)

7. Anderson, M.D., Graf, E.W., Elder, J.H., Ehinger, K.A. & Adams, W.J. (2021). Category systems for real-world scenes. *Journal of Vision*, 21(2):8 doi:10.1167/jov.21.2.8. (IF: 2.2)

8. Elder, J.H., Oleskiw, T. & Fründ, I. (2018). The role of global cues in the perceptual grouping of natural shapes. *Journal of Vision*, 18(12):14. (IF: 2.2)

9. Elder, J.H (2018). Shape from contour: Computation and representation. *Annual Review of Vision Science*, 4, 423-450. (IF: 7.8)

10. Wilder, J., Fründ, I. & Elder, J.H. (2018). Frequency tuning of natural shape perception revealed by classification image analysis. *Journal of Vision*, 18(8):9. (IF: 2.2)

11. Adams, W.J., Elder, J.H., Graf, E.W., Leyland, J., Lugtigheid, A.J. & Muryy, A. (2016). The Southampton-York Natural Scenes (SYNS) dataset: Statistics of surface attitude. *Scientific Reports* vol. 6. (IF: 5.0)

12. Drewes, J., Goren, G., Zhu, W. & Elder, J.H. (2016). Recurrent processing in the formation of shape percepts. *J. Neuroscience* vol. 36, no. 1, 185-192. (IF: 6.7)

13. Adams, W.J. & Elder, J.H. (2014). Effects of specular highlights on perceived surface convexity. *PLOS Computational Biology 10(5): e1003576.* doi:10.1371/journal.pcbi.1003576. (IF: 4.8)

14. T. McLeod, C. Samson, M. Labrie, K. Shehata, J. Mah, P. Lai, L. Wang, and J.H. Elder. (2013) Using video data acquired from an unmanned aerial vehicle to measure fracture orientation in an open pit mine. *Geomatica* vol. 67, no. 3, 173-180. (IF: 0.5)

15. Elder, J.H., Oleskiw, T.D., Yakubovich, A. & Peyré, G. (2013). On growth and formlets: Sparse multi-scale coding of planar shape. *Image and Vision Computing* vol. 31, 1-13. (Editor's Choice Paper) (IF: 2.8)

16. Wagemans, J.H., Elder, J.H., Kubovy, M., Palmer, S., Peterson, M., Singh, M. & von der Heydt, R. (2012). A century of Gestalt psychology in visual perception: I. Perceptual grouping and figure-ground organization. *Psychological Bulletin*, vol. 138, no. 6, 1172–1217. (IF: 17.7)

17. Fazl-Esri, E., Elder, J.H. & Tsotsos, J.K. (2012). Hierarchical classifiers for robust topological robot localization. *Journal of Intelligent and Robotic Systems*, vol. 68, no. 2, 147-163. (IF: 3.1)

18. Dornaika, F. & Elder, J.H. (2012) Image registration for foveated panoramic sensing. *ACM Transactions on Multimedia Computing, Communications and Applications*, vol. 8, no. 2. (IF: 3.1)

19. Morgenstern, Y. & Elder, J.H. (2012). Local visual energy mechanisms revealed by detection of global patterns. *Journal of Neuroscience*, vol. 32, no. 11, 3679-3696. (IF: 6.7)

20. Li, P., Fu, Y., Mohammed, U. & Elder, J.H. & Prince, S.J.D. (2011). Probabilistic models for inference about identity. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 34, no 1. 144-157. (IF: 24.3)

21. Or, C.F. & Elder, J.H. (2011). Oriented texture detection: ideal observer modelling and classification image analysis, *Journal of Vision*, vol. 11 no. 8 art. 16, 1-19. (IF: 2.2)

22. Elder, J. H. & Velisavljević, L. (2009). Cue dynamics underlying rapid detection of animals in natural scenes. *Journal of Vision*, vol. 9 no. 7 art. 7, 1-20. (IF: 2.2)

23. Velisavljević, L. & Elder, J. H. (2008). Visual short-term memory of local information in briefly viewed natural scenes: Configural and non-configural factors. *Journal of Vision*, vol. 8 no. 16 art. 8, 1-17. (IF: 2.2)

24. Velisavljevic, L. & Elder, J.H. (2008) Visual short-term memory for natural scenes: Effects of eccentricity, *Journal of Vision*, vol. 8 no. 4, art. 28, 1-17. (IF: 2.2)

25. Prince, S.J.D. & Elder, J.H. (2008) Tied factor analysis for face recognition across large pose differences. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 30, no. 6, 970-984. (IF: 24.3)

26. Elder, J.H., Prince, S.J.D., Hou, Y., Sizintsev, M. & Olevskiy, E. (2007) Pre-attentive and attentive detection of humans in wide-field scenes, *International Journal of Computer Vision*, vol. 72, no. 1, 47-66. (IF: 11.5)

27. Velisavljevic, L. & Elder, J.H. (2006) Texture properties affecting the accuracy of surface attitude judgements, *Vision Research*, vol. 46, no. 14, 2166-2191. (IF: 2.9)

28. Elder, J.H., Trithart, S., Pintilie, G. & MacLean, D. (2004) Rapid processing of cast and attached shadows, *Perception*, vol. 33, 1319-1338. (IF: 1.1)

29. Elder, J.H. & Sachs, A.J. (2004) Psychophysical receptive fields of edge detection mechanisms, *Vision Research*, vol. 44, no. 8, 795-813. (IF: 1.9)

30. Elder, J.H., Krupnik, A. & Johnston, L.A. (2003) Contour grouping with prior models, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25, no. 6, 661-674. (IF: 24.3)

31. Elder, J.H., & Goldberg, R. M. (2002). Ecological statistics of Gestalt laws for the perceptual organization of contours. *Journal of Vision*, 2(4), 324-353, http://journalofvision.org/2/4/5/, DOI 10.1167/2.4.5. (IF: 2.2)

32. Reeves, R., Elder, J.H. & Laidler, G. (2001). Accuracy of the Canadian Digital Terrain Data in the Gatineau region of Québec. *Geomatica*, vol. 55, no. 1, 57-64. (IF: 0.5)

33. Elder, J.H. & Goldberg, R.M. (2001). Image editing in the contour domain. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 23, no. 3, 291-296. (IF: 24.3)

34. Wilcox, L.M., Elder, J.H. & Hess, R.F. (2000). The effects of blur and size on monocular and stereoscopic localization. *Vision Research*, vol. 40, no. 26, 3575-3584. (IF: 1.9)

35. Elder, J.H. (1999) Are edges incomplete*? International Journal of Computer Vision,* vol. 34, no. 2/3, 97-122. (IF: 11.5)

36. Elder, J.H. & Zucker, S.W. (1998). Local scale control for edge detection and blur estimation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 20, no. 7, 699-716. (IF: 24.3)

37. Elder, J.H. & Zucker, S.W. (1998). Evidence for boundary-specific grouping. *Vision Research*, vol. 38, no. 1, 143-152. (IF: 1.9)

38. Elder, J.H. & Zucker, S.W. (1994). A measure of closure. *Vision Research*, vol. 34, no. 24, 3361-3370. (IF: 1.9)

39. Elder, J.H. & Zucker, S.W. (1993). The effect of contour closure on the rapid discrimination of two-dimensional shapes. *Vision Research*, vol. 33, no. 7, 981-991. (IF: 1.9)

Papers in Published Conference Proceedings (Refereed)

Where known, I have indicated the acceptance rate for the conference.

1. Spencer, J. *et al.*, 2023. The second monocular depth estimation challenge. In *2023 IEEE/CVF Computer Vision and Pattern Recognition Workshops (CVPRW)* 3603-3075.

2. Liu, K. & Elder, J.H. (2023). Sparse shape encoding for topologically improved instance segmentation. *Conference on Computer and Robot Vision (CRV)*, 45-54.

3. Qian, Y.. & Elder, J.H. (2023). What does the occluding contour tell us about quantitative shape? *Conference on Computer and Robot Vision (CRV)*, 55-62.

4. Perroni Filho, H., Trajcevski, A., Bhargava, K., Javed, N. & Elder, J.H. (2023). Attentive sensing for long-range face recognition. In *2023 IEEE/CVF Winter Conference on Applications of Computer Vision Workshops (WACVW)* 613-622.

5. Spencer, J., Qian, C.S., Russell, C., Hadfield, S., Graf, E., Adams, W., Schofield, A.J., Elder, J.H., Bowden, R., Cong, H. and Mattoccia, S., 2023. The monocular depth estimation challenge. In *2023 IEEE/CVF Winter Conference on Applications of Computer Vision Workshops (WACVW)* 623-632.

6. Wang, Y., Ming, J., Jia, X., Elder, J.H., Lu & H. (2022) Blind Image Super-Resolution with Degradation-Aware Adaptation. *Proc. Asian Conference on Computer Vision (ACCV)*, 894-910. Acceptance Rate: 33%.

7. Qian, Y. & Elder, J.H. (2022). A reliable online method for joint estimation of focal length and camera rotation. *European Conference on Computer Vision (ECCV)*, 249-265, Springer. Acceptance Rate: 28%.

8. Cheng, G. & Elder, J.H. (2022) VCSeg: Virtual camera adaptation for road segmentation. *Proceedings of the Winter Conference on Applications of Computer Vision (WACV)*, 277-286. Acceptance Rate: 35%.

9. Koshkina, M. & Elder, J.H. (2021) Contrastive learning for sports video: unsupervised player classification. *7th International Workshop on Computer Vision in Sports*, *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 4528-4536. Acceptance Rate: 48%. **Runner up for best paper award.**

10. Pidaparthy, H., Dowling, M.H. & Elder, J.H. (2021) Automatic abbreviation of hockey videos. *7th International Workshop on Computer Vision in Sports*, *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 4585-4593. Acceptance Rate: 48%.

11. Wang, Y., Li, Y., Elder, J.H., Wu, R., Lu, H. & Zhang, L. (2020) Synergistic Saliency and Depth Prediction for RGB-D Saliency Detection. *Proc. Asian Conference on Computer Vision (ACCV), 336-352.*

12. Cheng, G., Wang, Y., Qian, Y. & Elder, J.H. (2020) Geometry-guided adaptation for road segmentation. *Proc. 17th Conference on Computer and Robot Vision (CRV), 46-53.* **Best Computer Vision Paper Award**.

13. Pidaparthy, H. & Elder, J.H. (2019) Keep your eye on the puck: Automatic hockey videography. *Proceedings of the Winter Conference on Applications in Computer Vision (WACV)*, 1636-1644. Acceptance Rate: 37%.

14. Qian, Y., Ramalingam, S. & Elder, J.H. (2018) LS3D: Single-view Gestalt 3D surface reconstruction from Manhattan line segments. *Proceedings of the Asian Conference on Computer Vision (ACCV), LNCS 11364*, 399-416. Acceptance Rate: 28%.

15. Ehinger, K.A., Adams, J.A., Graf, E.W. & Elder, J.H. (2017) Local depth edge detection in humans and deep neural networks. *International Conference on Computer Vision (ICCV) Workshop on Mutual Benefits of Cognitive and Computer Vision*, 2681-2689.

16. Cheng, G., Qian, Y. & Elder, J.H. (2017) Fusing geometry and appearance for road segmentation. *International Conference on Computer Vision (ICCV) Workshop on Computer Vision for Road Scene Understanding and Autonomous Driving*, 166-173.

17. Corral-Soto, E.R. & Elder, J.H. (2017) Slot cars: 3D modelling for improved visual traffic analytics. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Traffic Surveillance Workshop and Challenge*, 889-897.

18. Almazen, E.J., Tal, R., Qian, Y. & Elder, J.H. (2017) MCMLSD: A dynamic programming approach to line segment detection. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2031-2039. Acceptance Rate: 29%.

19. Elasal, N. & Elder, J.H. (2017) Estimating camera tilt from motion without tracking. *Proc. 14th Conference on Computer and Robot Vision (CRV)*, IEEE, 72-79. Oral Acceptance Rate: 35%.

20. Mehrani, P. & Elder, J.H. (2017) Estimating coarse 3D shape and pose from the bounding contour. *Proc. 12th International Conference on Computer Vision Theory and Applications (VISAPP)*, 603-610.

21. Elasal, N. & Elder, J.H. (2016) Unsupervised crowd counting. *Proc. 13th Asian Conference on Computer Vision (ACCV)*, Springer, 329-345. Acceptance Rate: 25%.

22. Almazen, E.J., Qian, Y. & Elder, J.H. (2016) Road segmentation for classification of road weather conditions. *Proc. 4th Workshop on Computer Vision for Road Scene Understanding and Autonomous Driving*, *European Conference on Computer Vision (ECCV) Workshops*, Springer, 96-108.

23. Qian, Y., Almazen, E.J. & Elder, J.H. (2016) Evaluating features and classifiers for road weather condition analysis. *Proc. International Conference on Image Processing (ICIP)*, IEEE, 4403–4407. Acceptance Rate: 45%.

24. Adams, W.J., Muryy, A.A., Graf, E.W., Lugtigheid, A.J. and Elder, J.H. (2016) The Southampton York natural scenes (SYNS) dataset. *Proc. 12th European Conference on Visual Media Production (CVMP),* ACM, 21:1-21:2. Acceptance Rate: 59%.

25. Corral-Soto, E.R. and Elder, J.H. (2014) Automatic single-view calibration and rectification from parallel planar curves. *Proc. European Conference on Computer Vision (ECCV), LNCS*, Springer, 813–827. Acceptance Rate: 27%.

26. Yakubovich, A. & Elder, J.H. (2014) Building better formlet codes for planar shape. *Proc. 11th Conference on Computer and Robot Vision (CRV)*, IEEE, 84–91.

27. Movahedi, V. & Elder, J.H. (2013) Combining local and global cues for closed contour extraction. *Proc. British Machine Vision Conference (BMVC)*, BMVA Press, 128.1-128.11. Acceptance Rate: 30%.

28. Tal, R. & Elder, J.H. (2012) An accurate method for line detection and Manhattan frame estimation. *Proc. Asian Conference on Computer Vision (ACCV) Workshops, Part II, LNCS 7729*, Springer-Verlag, 580-593.

29. Corral-Soto, E.R., Tal, R., Wang, L., Persad, R., Chao, L. Solomon, C., Hou, Y., Sohn G., Elder, J.H. (2012) 3DTown: The automatic urban awareness project. *Proc. 9th Conference on Conference on Computer and Robot Vision (CRV)*, IEEE Computer Society, 433-440.

30. Movahedi, V. & Elder, J.H. (2010) Design and perceptual validation of performance measures for salient object segmentation. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshop on Perceptual Organization in Computer Vision (WPOCV)*, IEEE Computer Society, Los Alamitos, CA, 49-56.

31. Prince, S.J.D. & Elder, J.H. (2010) Bayesian identity clustering. *Proc. 7th Canadian Conference on Computer and Robot Vision (CRV)*, IEEE Computer Society, Los Alamitos, CA, 32-39.

32. Oleskiw, T.D., Elder, J.H. & Peyré, G. (2010) On growth and formlets: Sparse multiscale coding of planar shape. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, IEEE Computer Society, Los Alamitos, CA, 459-466. Acceptance Rate: 27%.

33. Fazl-Ersi, E.; Elder, J.H.; Tsotsos, J.K. (2009). Hierarchical appearance-based classifiers for qualitative spatial localization. *Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 3987-3992. Acceptance Rate: 55%.

34. Denis, P., Elder, J.H., Estrada, F. (2008) Efficient edge-based methods for estimating Manhattan frames in urban imagery. *Proc. European Conf. on Computer Vision (ECCV) II*, 5303, 197-210. Acceptance Rate: 28%.

35. Prince, S.J.D. & Elder, J.H. (2007) Probabilistic linear discriminant analysis for inferences about identity. *Proc. International Conference on Computer Vision (ICCV)*, IEEE, 1751-1758. Acceptance Rate: 23%.

36. Estrada, F.J. & Elder, J.H. (2006) Multi-scale contour extraction based on natural image statistics. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshop on Perceptual Organization in Computer Vision (POCV)*, New York, NY. doi: 10.1109/CVPRW.2006.134 Oral Acceptance Rate: 24%).

37. Prince, S.J.D. & Elder, J.H. (2006) Tied factor analysis for face recognition across large pose changes. *Proc. British Machine Vision Conference (BMVC)*, vol. 3, 889-898. Acceptance Rate: 30%.

38. Prince, S.J.D.; Elder, J.H; Hou, Y.; Sizinstev, M.; Olevskiy, E.(2006) Towards face recognition at a distance. *Crime and Security. The Institution of Engineering and Technology Conference*, 570 – 575.

39. Prince, S.J.D., Elder, J.H., Hou, Y., Sizintsev, M. & Olevskiy, E. (2005) Statistical cue integration for foveated wide-field surveillance. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* IEEE Computer Society, Los Alamitos, CA, 603-610. Acceptance Rate: 28%.

40. Prince, S.J.D. & Elder, J.H. (2005) Creating invariance to "nuisance parameters" in face recognition. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* IEEE Computer Society, Los Alamitos, CA 446-453. Acceptance Rate: 28%.

41. Prince, S.J.D., Elder, J.H., Hou, Y. & Sizintsev, M. (2005) Preattentive face detection for foveated wide-field surveillance. *Proc. IEEE Workshop on Applications in Computer Vision (WACV),* IEEE Computer Society, Los Alamitos, CA, 739-746.

42. Johnston, L.A. & Elder, J.H. (2004) Efficient computation of closed contours using modified Baum-Welch updating. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR Workshop on Perceptual Organization in Computer Vision (POCV),* Washington, DC. doi: 10.1109/CVPR.2004.56.

43. Elder, J.H. (2002) Ecological statistics of contour grouping. *Proc.* 2nd International Workshop on Biologically Motivated Computer Vision, Tubingen, Germany, in *Lecture Notes in Computer Science,* vol. 2525, H.H. Bulthoff et al, eds, Springer-Verlag, Berlin, 230-238.

44. Dornaika, F. & Elder, J.H. (2002). Image registration for foveated omnidirectional sensing. *Proc. 7th European Conference on Computer Visio*n (ECCV), Copenhagen, in *Lecture Notes in Computer Science*, vol. 2353, Springer-Verlag, Berlin, 606-620. Acceptance Rate: 38%.

45. Elder, J.H. & Krupnik, A. (2001). Contour grouping with strong prior models. *Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), IEEE Comput. Soc, Los Alamitos, CA,* vol. 2, 414-21. Acceptance Rate: 31%.

46. Elder, J.H. & Goldberg, R.M. (1998) Image editing in the contour domain. *Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 374-381.* Acceptance Rate: 31%.

47. Jenkin, M., Elder, J.H. & Pintilie, G. (1998) Loosely-coupled telepresence through the panoramic image server. *Proc. Vision Interface (VI), 249-254.*

48. Elder, J.H. & Zucker, S.W. (1996). Scale space localization, blur and contour-based image coding. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR),* 27-34. Acceptance Rate: 25%.

49. Elder, J.H. & Zucker, S.W. (1996). Computing contour closure. *Proc. 4th European Conference on Computer Vision (ECCV), vol.1,* 399-412.

50. Elder, J.H. & Zucker, S.W. (1996). Local scale control for edge detection and blur estimation. *Proc. 4th European Conference on Computer Vision (ECCV), vol. 2,* 57-69.

51. Elder, J.H., Zucker, S.W. (1995). Shadows, defocus and reliable estimation. *Proc. 6th International Conference on the Computational Analysis of Images and Patterns (CAIP),* 318-325.

52. Elder, J.H. & Zucker, S.W. (1995). Scale space surfaces and blur estimation. *Proc. Vision Interface*

(VI), 140-147. **Best Paper Award**.

Book Chapters

1. Elder, J.H. (2015). Bridging the dimensional gap: Perceptual organization of contour into two-dimensional shape. In J. Wagemans, ed., *Oxford Handbook of Perceptual Organization*, Oxford University Press, Oxford UK.

2. Elder, J.H. (2014). Edge detection. In K. Ikeuchi, ed., *Computer vision: A Reference Guide*, Springer US.

3. Elder, J.H. (2013). Perceptual organization of shape. In S. Dickinson & Z. Pizlo, ed., *Shape Perception in Human and Computer Vision: An Interdisciplinary Perspective*, Springer.

4. Elder, J.H., Dornaika, F., Hou, Y. & Goldstein, R. (2005) Attentive wide-field sensing for visual telepresence and surveillance. In L. Itti, G. Rees & J. Tsotsos, eds, *Neurobiology of Attention*, Academic Press/Elsevier, San Diego, 624-632.

Editorials

1. Elder, J.H., Victor, J. & Zucker S.W. (2016). Editorial: Understanding the statistics of the natural environment and their implications for vision. *Vision Research*, 120, 1-4.

2. Gepshtein, S., Elder, J. H., & Maloney, L. T. (2008). Editorial: Perceptual organization and neural computation. *Journal of Vision*, 8(7):i, 1-4, http://journalofvision.org/8/7/i/, doi:10.1167/8.7.i.

3. Gold, J.M., Shiffrin, R., & Elder, J.H. (2006). Editorial: Finding visual features: Using stochastic stimuli to discover internal representations. *Journal of Vision*, 6(4), ii, http://journalofvision.org/6/4/ii/, doi:10.1167/6.4.ii.

Patents

1. Elder, J.H., Pidaparthy, H. & Dowling, M. (2022). *System and method for automated video segmentation of an input video signal capturing a team sporting event* (US Patent Application 63/215,352). Filed Jun 23, 2022.

2. Elder, J.H. & Pidaparthy, H. (2021). *System and method for automated video processing of an input video signal using tracking of a single moveable bilaterally-targeted game-object* (US Patent No. 16/732,422). Filed Jan 2, 2020, awarded Nov 30, 2021.

3. Elder, J.H., Hou, Y., Goldstein, R. & Dornaika, F. (2013). *Attentive panoramic visual sensor* (Canadian Patent #2,386,347). Filed May 14, 2001, awarded July 16, 2013, Expires May 14, 2022.

4. Elder, J.H., Hou, Y., Goldstein, R. & Dornaika, F. (2006). *Attentive panoramic visual sensor* (US Patent No. 7,130,490). Filed May 14, 2001, awarded Oct 31, 2006, Expires Apr 19, 2025.

Papers in Published Conference Proceedings (Non-Refereed)

1. Trajcevski, A., Perroni Filho, H., Javed, N., Naheyan, T., Bhargava, K. & Elder, J.H. (2022). Sensorimotor system design of socially intelligent robots. *AI for De-Escalation Workshop, International Conference on Pattern Recognition (ICPR)*, Montreal, QC, Canada, 106-118.

2. Lee, T., Kim, T., Sohn, G & Elder, J.H. (2010). Relative orientation estimation of video streams from a single pan-tilt-zoom camera. *Proceedings, Canadian Geomatics Conference and Symposium of Commission I, ISPRS Convergence in Geomatics – Shaping Canada's Competitive Landscape*. Available from http://www.isprs.org/proceedings/XXXVIII/part1/.

3. Krupnik, A. and Elder, J.H. (2002). Extraction of lakes from satellite imagery. *Proceedings, Joint International Symposium on Geospatial Theory, Processing and Applications*, Ottawa, Canada.

Abstracts in Published Conference Proceedings (Refereed)

1. Elder, J.H., Oleskiw, T.D., Fruend, I., Lee, G.M., Sutter, A.E., Pasupathy, A., Simoncelli, E.P., Movshon, J.A., Kiorpes, L., Majaj, N. (2023). V4 neurons are tuned for local and non-local features of natural planar shape. *Vision Sciences Society Conference*.

2. Elder, J.H., Baker, N., Wilder, J., Chosang, T. (2023). Processing of coarse and fine shape features by humans and deep networks: A shape frequency analysis. *Vision Sciences Society Conference*.

3. Chosang, T. Elder, J.H. (2023). Global factors in perceptual shape completion. *Vision Sciences Society Conference*.

4. Qian, C.S., Elder, J.H., Graf, E.W., Adams, W.J., Schofield, A.J. (2023). Surface attitude judgements in real-world scenes. *Vision Sciences Society Conference*.

5. Trescakova, M., Adams, W., Anderson, M.D., Elder, J.H. & Graf, E. (2023) Depth estimation in real-world scenes, *Applied Vision Association Meeting*, London, UK.

6. Oleskiw, T., Elder, J.H., Lee, G., Sutter, A., Pasupathy, A., Simoncelli, E., Movshon, J.A., Kiorpes, L. & Majaj, N. (2023). V4 neurons are tuned for local and non-local features of natural planar shape. *Computational and Systems Neuroscience (COSYNE)*. Acceptance rate: 48%

7. Qian, C.S., Elder, J.H., Adams, W., Graf, E. & Schofield, A.J.. Surface attitude judgements in synthetic textures and natural images: a method evaluation (2022). *Applied Vision Association Conference.*

8. Chosang, T., Liu, K. & Elder, J.H. (2022). Local and non-local factors in perceptual shape completion. *European Conference on Visual Perception.*

9. Qian, C., Parmar, A., Elder, J.H., Adams, W., Graf, E., Anderson, M., Spencer, J. & Schofield, A.J. (2022). Surface attitude judgements with haptic and visual response. *European Conference on Visual Perception.*

10. Qian, C., Elder, J.H., Adams, W. & Schofield, A.J. (2022). Surface attitude judgements in artificial texture and natural images: A method evaluation. *Vision Sciences Society Conference.*

11. Koshkina, M. & Elder, J.H. (2022). Contrastive learning for sports video: Unsupervised player classification. *Workshop on Computer Vision for Winter Sports.*

12. Qian, C., Elder, J.H., Adams, W.J., Pamar, A. & Schofield, A.J. (2021). Surface attitude judgements in monocular and stereo textures: a method evaluation. *European Conference on Visual Perception.*

13. Nisar, I. Elder, & J.H. (2021). Cortical magnification analysis of shape adaptation reveals early curvature coding mechanisms. *Vision Sciences Society Conference.*

14. Baker, N. & Elder, J.H. (2021). Deep neural network selectivity for global shape. *Vision Sciences Society Conference.*

15. Keshvari, S., Fan, X. & Elder, J.H. (2021). Configural processing in humans and deep convolutional neural networks. *Vision Sciences Society Conference.*

16. Goettker, A., Pidaparthy, H., Braun, D., Elder, J.H. & Gegenfurtner, K. (2021). Keep your eyes on the puck: Context information can induce predictive eye movements *Vision Sciences Society Conference.*

17. Keshvari, K., Fründ, I. & Elder, J.H. (2020). Configural processing of 2D shape. *Vision Sciences Society Conference.*

18. Keshvari, S., Fründ, I. & Elder, J.H. (2019). Representation of non-local shape information in deep neural networks. *European Conference on Visual Perception*.

19. Ehinger, K.A., Qian, Y., Wilcox, L. & Elder, J.H. (2019). Influence of 2D shape on contour depth perception. *Vision Sciences Society Conference*.

20. Vilankar, K., Xiang, H., Ehinger, K., Adams, W., Graf, E. & Elder, J.H. (2019). Monocular depth discrimination in natural scenes: Humans vs deep networks. *Vision Sciences Society Conference*.

21. Anderson, M., Adams, W., Graf, E. & Elder, J.H. (2019). Stereopsis improves rapid scene discrimination. *Vision Sciences Society Conference*.

22. Clément, M. & Elder, J.H. (2018). What are the sparse components of natural shapes? *European Conference on Visual Perception*.

23. Ehinger, K.A., Joseph, K., Adams, W.J., Graf, E.W. & Elder, J.H. (2018). Use of local image information in depth edge classification by humans and neural networks. *Vision Sciences Society Conference.*

24. Anderson, M.D., Adams, W.J., Graf, E.W., Ehinger, K.A. & Elder, J.H. (2018). Human-centred categorization of natural scenes. *Vision Sciences Society Conference*.

25. Cavanagh, P., Casati, R. & Elder, J.H. (2018). Tight shadows shrink depth. *Vision Sciences Society Conference.*

26. Fründ, I., Wilder, J.D. & Elder, J.H. (2018). Nonlinear visual mechanisms for 2D shape discrimination with pose uncertainty, *Vision Sciences Society Conference*.

27. Ehinger, K.A., Joseph, K., Adams, W.J., Graf E. & Elder, J.H. (2017). Learning to identify depth edges in real-world images with 3D ground truth. *Vision Sciences Society Conference*.

28. Blusseau, S., Adams, W., Graf, E., Elder, J.H. & Lugtigheid, A. (2016). Visual discrimination of surface attitude from texture. *European Conference on Visual Perception*, Barcelona, Spain.

29. Wu, R., Fründ, I. & Elder, J.H. (2016) What is Perceptual Curvature? *Vision Sciences Society Conference*.

30. Muryy, A., W.J. Adams, E.W. Graf & J.H. Elder (2016). Estimating local surface attitude from 3D point cloud data. *Vision Sciences Society Conference*.

31. Wilder, J., Fründ, I. & Elder, J.H. (2015) Frequency tuning of shape discrimination revealed by classification image analysis, *European Conference on Visual Perception*.

32. Lugtigheid, A.J., Adams, W., Elder, J.H., Graf, E.W. & Muryy, A.A. (2015). Biases in perceived slant and tilt of real surfaces, *Vision Sciences Society Conference*.

33. Graf, E.W., Adams, W. & Elder, J.H (2015). The effect of the bounding contour on the perception of surface shape, *Vision Sciences Society Conference*.

34. Muryy, A.A., Adams, W., Elder, J.H., Graf, E.W., & Lugtigheid, A.J. (2015). Estimating 3D surface properties of natural scenes, *Vision Sciences Society Conference*.

35. Adams, W., Elder, J.H., Graf, E.W., Muryy, A.A. & Lugtigheid, A.J. (2015). Perception of 3D structure and natural scene statistics: The Southampton-York Natural Scenes (SYNS) dataset, *Vision Sciences Society Conference*.

36. Goren, G. & Elder, J.H. (2015). Visual distortions induced by simple and complex shapes, *Vision Sciences Society Conference*.

37. Fründ, I. & Elder, J.H. (2015). Tuning of the visual system to the curvature of natural shapes, *Computational and Systems Neuroscience (COSYNE)*.

38. Fründ, I. & Elder, J.H. (2015). Psychophysical evaluation of planar shape representations for object recognition, *Vision Sciences Society Conference*.

39. Muryy, A., Lugtigheid A., Adams, W., Elder, J.H. & Graf, E. (2014) SYNS dataset of natural scene measurements, *Applied Vision Association Meeting*, London, UK.

40. Lugtigheid A., Adams, W., Elder, J.H., Graf, E. & Muryy, A. (2014) Interactions between slant and tilt perception, *Applied Vision Association Meeting*, London, UK.

41. Goren, G. & Elder, J.H. (2014). Visual distortions induced by simple and complex shapes, *Canadian Society for Brain, Behaviour and Cognitive Science Annual Meeting, Canadian Journal of Experimental Psychology, In Press.* **(Hebb student poster award runner-up).**

42. Fründ, I. & Elder, J.H. (2014). Closure and global shape contributions to contour grouping, *Vision Sciences Society Conference*.

43. Goren, G. & Elder, J.H. (2013). Shape-induced distortions of spatial judgements, *Journal of Vision, 13(9):64* **(Best student poster award).**

44. Fründ I, Elder J. H. (2013), The contribution of local contour features to global shape processing, Perception 42 ECVP Abstract Supplement, 228.

45. Fründ, I. & Elder, J.H. (2013). Statistical coding of natural closed contours, *Journal of Vision, 13(9):119.*

46. Drewes, J., Goren, G. & Elder, J.H. (2012). Psychophysical Indications of Recurrent Processing in shape perception, *Perception 41 ECVP Abstract Supplement, 219.*

47. Corral-Soto, E.R., Tal, R., Wang L., Persad R., Chao, L., Solomon, C., Hou, Y., Sohn, G. & Elder, J.H. (2012). 3DTown: The automatic urban awareness project. *Virtual Reality Short Papers and Posters (VRW),* IEEE, 87-88.

48. Drewes, J., Goren, G. & Elder, J.H. (2012). A temporal window of facilitation in the formation of shape percepts, *Journal of Vision*, 12(9): 314.

49. Adams, W.J., Graf, E.W., Elder, J.H. & Josephs, J.A.E. (2012). Inferring 3D surface shape from 2D contour curvature. *Journal of Vision*, 12(9): 226.

50. Elder, J.H. (2011). Influence of object pose on contour grouping, *Perception 40 ECVP Abstract Supplement, 59.*

51. Elder, J.H. Oleskiw, T.D., Graf, E.W. & Adams, W.J (2010). Contour grouping and natural shapes: beyond local cues [Abstract], *Journal of Vision*, 10(7):1171, http://journalofvision.org/10/7/1171/, doi: 10.1167/10.7.1171.

52. Elder, J. H., & Velisavljevic, L. (2009). Cue dynamics underlying rapid detection of animals in natural scenes [Abstract], *Journal of Vision*, 9(8):787, http://journalofvision.org/9/8/787/, doi:10.1167/9.8.787.

53. Mander, C., Elder, J. H., Keillor, J., & Hou, Y. (2009). Co-determination of attentional allocation by endogenous and exogenous factors [Abstract]. *Journal of Vision*, 9(8):135, http://journalofvision.org/9/8/135/, doi:10.1167/9.8.135.

54. Elder, J. H., Balaban, D. Y., Kamyab, A., Wilcox, L.M., & Hou, Y. (2008). Selectivity for faces as exogenous attentional cues [Abstract]. *Journal of Vision*, 8(6):685, 685a, http://journalofvision.org/8/6/685/, doi:10.1167/8.6.685.

55. Elder, J. H., & Morgenstern, Y. (2007). Nonlinear pooling mechanisms underlying edge detection *Perception*, vol. 36 (supplement), 39.

56. Or, C. C.-F., & Elder, J. H. (2007). Classification image analysis of oriented texture detection [Abstract]. *Journal of Vision*, 7(9):359, 359a, http://journalofvision.org/7/9/359/, doi:10.1167/7.9.359.

57. Elder, J. H., & Morgenstern, Y. (2006). Power spectrum classification image analysis reveals localized mechanisms underlying nonlinear detection of narrowband stimuli [Abstract]. *Journal of Vision*, 6(6), 117a, http://journalofvision.org/6/6/117/, doi:10.1167/6.6.117.

58. Morgenstern, Y., & Elder, J.H. (2005). Noise does not shrink the summation region for grating detection [Abstract]. *Journal of Vision*, 5(8), 477a, http://journalofvision.org/5/8/477/, doi:10.1167/5.8.477.

59. Clarke, A. & Elder, J.H. (2004). Principal component analysis of good continuation cues. *Perception, vol. 33 (supplement),* 46.

60. Morgenstern, Y., Elder, J. H., & Hou, Y. (2004). Contrast dependence of spatial summation revealed by classification image analysis [Abstract]. *Journal of Vision*, 4(8), 539a, http://journalofvision.org/4/8/539/, doi:10.1167/4.8.539.

61. Elder, J. H. (2003). Contour grouping: Ecological statistics, generative models and ideal observers, *Invited Talk, Fall Vision Meeting: Symposium on Segmentation and Grouping*, Tucson, AZ. *Journal of Vision*, *3*(12), 10a, http://journalofvision.org/3/12/10/, doi:10.1167/3.12.10.

62. Elder, J. H., Morgenstern, Y., & Tabone, R. (2003). The efficiency of contour grouping [Abstract]. *Journal of Vision*, *3*(9), 118a, http://journalofvision.org/3/9/118/, doi:10.1167/3.9.118.

63. Velisavljevic, L., & Elder, J. H. (2003). Eccentricity effects in the rapid visual encoding of natural images [Abstract]. *Journal of Vision*, *3*(9), 647a, http://journalofvision.org/3/9/647/, doi:10.1167/3.9.647.

64. Elder, J.H., Morgenstern, Y. & Tabone, R. (2002) A New ideal observer formulation for perceptual organization, *Perception, vol. 31 (supplement),* 109.

65. Amati, J., & Elder, J. H. (2002). Slant capture in the perception of multiple textured transparent surfaces. *Journal of Vision*, 2(7), 97a, http://journalofvision.org/2/7/97/, DOI 10.1167/2.7.97.

66. Velisavljevic, L., & Elder, J. H. (2002). What do we see in a glance? [Abstract]. *Journal of Vision*, 2(7), 493a, http://journalofvision.org/2/7/493/, DOI 10.1167/2.7.493.

67. Amati, J. & Elder, J.H. (2001). Factors affecting the discrimination and perceived attitude of multiple transparent surfaces. *Journal of Vision*, 1(3), 430a, http://journalofvision.org/1/3/430, DOI 10.1167/1.3.430.

68. Sachs, A. & Elder, J.H. (2000) Estimating the psychophysical receptive fields of edge detection mechanisms, *Perception, vol. 29 (supplement),* 122.

69. Elder, J.H., Wilcox, L.M. (2000). Computational modelling of stereoacuity for binocularly uncorrelated (2nd order) stimuli, *Investigative Ophthalmology and Visual Science, vol. 41, no. 4,* S736.

70. Velisavjlevic, L. & Elder, J.H. (2000). What is the optimal texture for perceiving surface attitude?, *Investigative Ophthalmology and Visual Science, vol. 41, no. 4,* S219.

71. Reeves, R and Elder, J.H. (2000). Accuracy of Canadian digital terrain data in the Gatineau region of Québec. *GEOMATICS 2000, Montreal, Mar 2000.*

72. Elder, J.H., Beniaminov, D. & Pintilie, G. (1999). Edge classification in natural images, *Investigative Ophthalmology and Visual Science, vol. 40, no. 4,* S357.

73. Elder, J.H. & Goldberg, R.M. (1998). Inferential reliability of contour grouping cues in natural images. *Perception, vol. 27 (supplement),* 11.

74. Elder, J.H., Trithart, S., Pintilie, G. & MacLean, D. (1998). Rapid processing of cast and attached shadows*, Investigative Ophthalmology and Visual Science, vol. 39, no. 4,* S853.

75. Elder, J.H. (1997). Brightness filling-in of natural images. *Perception, vol 26 (supplement)* 57.

76. Elder, J.H. & Zucker, S.W. (1996). The visual computation of closed contours. *Investigative Ophthalmology and Visual Science, vol. 37, no. 3,* 805.

77. Wilcox, L.M., Elder, J.H. & Hess, R.F. (1996). The effect of stimulus blur and size on stereoacuity. *Investigative Ophthalmology and Visual Science, vol. 37, no. 3,* 3127.

78. Elder, J.H., Zucker, S.W. (1995). Boundaries, textures and the perceptual binding of fragmented figures. *Perception, vol. 24 (supplement),* 119.

79. Elder, J.H. & Zucker, S.W. (1995). The local character of generalized luminance transitions. *Investigative Ophthalmology and Visual Science, vol. 36, no. 4,* 3855.

80. Elder, J.H. & Zucker, S.W. (1992). Contour closure and the perception of shape. *Investigative Ophthalmology and Visual Science, vol. 33, no. 4,* 1339.

81. Elder, J.H. & Zucker, S.W. (1991). The importance of contour closure in visual search. *Investigative Ophthalmology and Visual Science, vol. 32,, no. 4,* 715.

Technical Reports

1. Elder, J.H., Ehinger, K., Claudio, P., Vilankar, K., Hou, YU., Rao, P. (2019). IDEaS Call 1 - 1A - Contract W7714-196776: Real-time multiple object detection, tracking and modelling from fixed and airborne platforms.

2. Elder, J.H., Hou, Y., Parag, T., Mander, C, Corral Soto, E. & Keillor, J. (2009). R&D real-time surveillance contract no. W7711-078119/001/TOR, Call-Up #2, Defence R&D Canada

3. Elder, J.H., Hou, Y., Magdin, V. & Keillor, J. (2008). R&D real-time surveillance contract no. W7711-078119/001/TOR, Call-Up #1, Defence R&D Canada

4. Elder, J.H., Hou, Y., Cannons, K., Estrada, F., Markle, B. & Luo, R. (2006) DND TIES contract W7711-4-7924 Call-Up #9: Mathematical consulting in support of assisted target detection for low-light imagery, Year 1 Final Report

5. Prince, S.J.D. & Elder, J.H. (2005) Three-dimensional face reconstruction using near-infrared light. Technical report commissioned by VisionSphere Technologies.

6. Elder, J.H. & Velisavljevic, L. (1999). An experimental investigation of the effect of texture scaling properties on the visual judgement of surface attitude. PWGSC contract 03SV.W8477-8-AC38 for the Canadian Department of National Defense.

7. Elder, J.H. & Zucker, S.W. (1993). The integration of figure fragments into representations of planar shape. *McGill CIM Technical Report 93-2.*

8. Elder, J.H. (1986). Initial R&D of an innovative device for separating blood samples in the clinical chemistry laboratory. *Andronic Devices Limited, Vancouver.*

9. Elder, J.H. (1985). A software interface between a DEC PDP-11/23 computer and a neuromatic 2000 electromyograph. *Vancouver General Hospital Biomedical Engineering Department.*

10. Elder, J.H. (1984). Quantitative radiation detection for an automated system to analyse grain by proton activation. *Tri-University Meson Facility (TRIUMF), Vancouver.*

Conference & Workshop Presentations

Invited Conference & Workshop Keynotes & Plenaries

Elder, J.H. (2023) Monocular 3D Perception in Humans and Machines, *WACV Monocular Depth Estimation Challenge Workshop. Waikoloa, HI.*

Elder, J.H. (2021) Biomimetic Computer Vision: Science to Applications, *Canada-Korea Conference on Science & Technology, Halifax, NS.*

Elder, J.H. (2020) Human and Machine Perception of 3D Shape from Contour, *British Machine Vision Association Meeting: 3D Worlds from 2D Images in Humans and Machines, London, UK.*

Elder, J.H. (2019) Single-View Gestalt 3D Manhattan Surface Reconstruction, *2nd International Workshop on Lines, Planes and Manhattan Models for 3-D Mapping (LPM), International Conference on Robotics and Automation*, Montreal, QC.

Elder, J.H. (2019) Human and Machine Perception of 3D Shape from Contour, *Human Vision and Electronic Imaging*, Burlingame, CA, USA.

Elder, J.H. (2016) Adapting Video Analytics to the 3D Environment, *International Conference on Big Data and Information Analytics (BigDIA)*, Hunan, China.

Elder, J.H. (2016) Single-View 3D Scene Analysis, *Conference on Vision and Imaging Systems*, Waterloo, ON

Elder, J.H. (2015) Human and Computer Vision: Common Ground, *Visual Inference in Humans and Machines Workshop*, Bath, UK.

Invited Conference & Workshop Presentations

Elder, J.H. (2023) Connected minds: A networked society of people and machines. *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications Panel: When 6G meets robots – an era of machine-to-machine GPT*, Toronto, Ontario.

Elder, J.H. & Baker, N. (2022) The role of local and configural processes in the perceptual organization of object shape. *Vision Sciences Society Symposium: Perceptual organization – lessons from neurophysiology, human behaviour and computational modeling*, St. Petersburg, Florida.

Elder, J.H. (2021) AI Videography for Amateur Hockey, *Dagstuhl Seminar on Machine Learning in Sports*, Germany.

Elder, J.H. (2021) Biomimetic Computer Vision: Science to Applications, *International Nathiagali Summer College,* Pakistan.

Elder, J.H. (2021) Visual 3D understanding of mixed traffic in busy intersections, *Transformative Transportation '21,* Toronto, Ontario.

Elder, J.H. (2019) Single-view 3D shape from contour, *Symposium on the geometry of 3D shape and scene perception, European Conference on Visual Perception,* Leuven, Belgium.

Elder, J.H. (2019) Single-view Gestalt 3D Manhattan surface reconstruction, *Society for Mathematical Psychology,* Montreal, Quebec.

Elder, J.H. (2019) Gaze control for attentive computer vision systems, *Gordon Research Conference on Eye Movements,* Bates College, Maine.

Elder, J.H. (2019) Explainable 3D Shape from Contour, *Conference on Computer and Robot Vision (CRV),* Montreal, Quebec.

Elder, J.H. (2018) Human and machine perception of 3D shape from contour, *CVPR Workshop on Mutual Benefits of Cognitive and Computer Vision,* Salt Lake City, Utah.

Elder, J.H. (2017) Two new methods for exploring the perception of natural shape, *International Workshop on Current Directions in Vision Sciences,* Peter Wall Institute for Advanced Studies, University of BC, Vancouver, BC.

Elder, J.H. (2015) Video Analytics for Sustainable Cities, *Canadian Visual Analytics School,* York University, Toronto, Ontario

Elder, J.H. (2015) General Purpose Models in Biological and Computer Vision, *Symposium on Machine Vision, European Conference on Visual Perception,* Liverpool, UK.

Elder, J.H. (2015) Perceptual Organization of Shape, *York University Centre for Vision Research International Conference on Perceptual Organization,* Toronto, Ontario.

Elder, J.H. (2014) Vision for CV/AV, *Connected Vehicle / Autonomous Vehicle Meeting, Ontario Ministry of Economic Development, Employment & Infrastructure,* Toronto.

Elder, J.H. (2014) Generative models of shape, *Symposium on Segmentation and Shape, Canadian Conference on Computer and Robot Vision,* Montreal, Quebec.

Elder, J.H. (2013) Configural determinants of the perceptual organization of shape, *Configural Processing Consortium Meeting,* Toronto, Ontario.

Elder, J.H. (2013) 2D/3D conversion: A love story. *3D Film Innovation Consortium Workshop, When and Why Should I Consider 2D to 3D Conversion?* Toronto, Ontario.

Elder, J.H. (2010) On grouping and formlets: The role of shape in perceptual organization. *ECCV Workshop on Shape Perception in Human and Computer Vision,* Crete, Greece.

Elder, J.H. (2010) Bringing 3D urban models to life. *The Golden Age of Geo-Positioning: Constructing Business Solutions,* Niagara-on-the-Lake, Ontario.

Elder, J.H. (2009) Segmenting salient shapes. *Mathematics and Image Analysis Conference*, Paris, France.

Elder, J.H. (2009) Perceptual segmentation of salient shapes. *GDR Mathématiques des systèmes perceptifs et cognitifs*, Paris, France.

Elder, J.H. & Estrada, F. (2007) A Bayesian multi-scale model of perceptual organization, Symposium on Perceptual Organization and Computation, Vision Sciences Society Conference, Florida.

Elder, J.H. (2005) Perceptual organization of contours, *Workshop on Early Vision: Computational and Biological*, Bertinoro, Italy.

Elder, J.H. (2005) Finding and recognizing people in unconstrained environments, *CIAR Neural Computation and Adaptive Perception Meeting*, Toronto, Ontario.

Elder, J.H. (2004) Visual coding of contours, *Early Cognitive Vision Workshop*, Isle of Skye, Scotland.

Elder, J.H. (2003) Visual processing of contours, *Computational Neuroscientists of Upper Canada Meeting*, Toronto, Ontario.

Elder, J.H. (2002) Ecological statistics of Gestalt laws for the perceptual organization of contours, *Gordon Research Conference on Sensory coding and the natural environment: Probabilistic models of perception*, Mount Holyoke College, Massachusetts, June 2002.

Unpublished Conference Presentations (refereed)

Elder, J.H. & Krupnik, A. (2001). Contour grouping with strong prior models. *IEEE Workshop on Perceptual Organization in Computer Vision, Vancouver, Canada.*

Elder, J.H. & Goldberg, R.M. (1998). The statistics of natural image contours. *IEEE Workshop on Perceptual Organization in Computer Vision, Santa Barbara, CA.*

Elder, J.H. & Zucker, S.W. (1996). The computation of closed bounding contours. *Vision Interface, Toronto.*

Unpublished Conference Presentations (non-refereed)

Elder, J.H., Oleskiw, T.D., Fruend, I., Lee, G.M., Sutter, Pasupathy, A., Simoncelli, E.P., Movshon, J.A., Kiorpes, L., Majaj, N. (2023). Efficient coding of local 2D shape. *MODVIS: Computational and Mathematical Models in Vision*.

Elder, J.H. (2023). Monocular 3D perception in humans and machines. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

Elder, J.H. (2022). Holistic shape perception in humans and machines. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

J.H. Elder, P. Cavanagh & R. Casati (2022). A Bayesian account of depth from shadow. *MODVIS*: *Computational and Mathematical Models in Vision*, St. Petersburg, FL.

Goettker, A., Pidaparthy, H., Braun, D., Elder, J.H. & Gegenfurtner, K. (2021). Keep your eyes on the puck: Context information induces predictive eye movements. *Tagung Experimentell Arbeitender Psychologen*, Ulm, Germany.

Elder, J.H. (2020). Single-view 3D shape from bounding contour. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

Elder, J.H. (2019). LS3D: Single-View Gestalt 3D Manhattan Surface Reconstruction. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

Elder, J.H. (2018). Scaling of Shape Perception. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

Anderson, M., Adams, W. J., Graf, E. W., Elder, J. H. & Ehinger, K. A. (2017) Human-centred categorization of natural scenes. *Applied Vision Association Christmas Meeting*, London, UK.

Ehinger, K.A., Joseph, K., Adams, W.J., Graf, E.W. & Elder, J.H. (2017). Learning to identify depth edges in real-world images with 3D ground truth. *Computational and Mathematical Models in Vision – MODVIS*, St. Petersburg, FL.

Elder, J.H., Ehinger, K., Adams, W.J., Graf, E.W. (2017). Discriminating depth edges. *Annual Interdisciplinary Conference*, Breckenridge, Colorado.

Elder, J.H. & Li, Y. (2016). Modeling the joint distribution of scene events at an edge. *Computational and Mathematical Models in Vision – MODVIS*, St. Petersburg, FL.

Elder, J.H.. (2016), Adams, W., Graf, E., Muryy, A., Lugtigheid, A. The Southampton-York Natural Scenes (SYNS) Dataset. *Annual Interdisciplinary Conference*, Breckenridge, Colorado.

Elder, J.H. , Frund, I. & Yakubovich. A. (2015). Generative shape trees. *Annual Interdisciplinary Conference*, Jackson Hole, Wyoming.

Frund, I. & Elder, J.H. (2014). Relating the ecological statistics of natural shapes to curvature tuning in macaque area V4, *Computational and Mathematical Models in Vision – MODVIS, St. Petersburg, FL*.

Elder, J.H. (2014). A generative model of local shape. *Annual Interdisciplinary Conference*, Jackson Hole, Wyoming.

Elder, J.H. (2013). Perceptual organization of shape. *Neural Computation and Adaptive Perception CIFAR Meeting*, San Francisco, CA.

Elder, J.H. (2013). Dynamic Carbon Mapping in Urban Environments, *CASCON CIVDDD Workshop on Collaborative Research in Big Data Analytics and Visualization*, Toronto.

Frund, I. & Elder, J.H. (2013). Human selectivity for statistical properties of natural shapes, *Computational and Mathematical Models in Vision – MODVIS 2013, Naples, FL*.

Elder, J.H. (2013). Perceptual organization of shape. *Annual Interdisciplinary Conference*, Jackson Hole, Wyoming.

Corral-Soto, E.R. & Elder, J.H. (2012). Automatic image rectification for motion analysis of highway traffic surveillance video. *Global Geospatial Conference,* Quebec City.

Tal, R. & Elder, J.H. (2012). Towards understanding Of urban scenes: Recovering pose and structure using linear constraints. *Global Geospatial Conference,* Quebec City. (**Student poster award**)

Elder, J.H. (2012). Attention is surprising. *Annual Interdisciplinary Conference*, Breckenridge, Colorado.

Elder, J.H. (2012) On grouping and formlets: The role of shape in perceptual organization, *Computational and Mathematical Models in Vision – MODVIS 2012*, Naples, FL.

Yakubovich, A. & Elder, J.H. (2011) A novel basis of anisotropic deformations for a sparse, multi-scale representation of planar shape, *York University International Conference on Plastic Vision*, Toronto, Canada.

Corral, E. & Elder, J.H. (2011) Probabilistic detection and grouping of highway lane marks, *York University International Conference on Plastic Vision*, Toronto, Canada.

Tal, R. & Elder, J.H. (2010) Line-based approach for three-dimensionalizing urban surveillance networks, *GEOIDE Annual Scientific Conference*, Calgary, Canada.

Corral Soto, E. & Elder, J.H. (2010) Probabilistic detection and grouping of highway lane marks, *GEOIDE Annual Scientific Conference*, Calgary, Canada.

Josephs, J.A.E., Adams, W.J., Graf, E.W. & Elder, J.H. (2009) Anisotropies in the perceived slant of ceiling, ground and wall planes. *York University International Conference on Vision in 3D Environments*, Toronto, Canada.

Tal, R. & Elder, J.H. (2009) Kernel-based Hough method for improved estimation of Manhattan frames in urban imagery, *York University International Conference on Vision in 3D Environments*, Toronto, Canada.

Oleskiw, T. & Elder, J.H. (2009) Multiscale representations of object boundary shape, *York University International Conference on Vision in 3D Environments*, Toronto, Canada.

Corral Soto, E. & Elder, J.H. (2009) Image stabilization: Extending the range capabilities of the KLT algorithm via phase correlation, *York University International Conference on Vision in 3D Environments*, Toronto, Canada.

Movahedi, V. & Elder, J.H. (2009) Performance measure for perceptual grouping algorithms, *York University International Conference on Vision in 3D Environments*, Toronto, Canada.

Tal, R. & Elder, J.H. (2009) Kernel-based Hough method for improved estimation of Manhattan frames in urban imagery, *GEOIDE Annual Scientific Conference*, Vancouver, Canada.

Oleskiw, T. & Elder, J.H. (2009) Multiscale representations of object boundary shape, *GEOIDE Annual Scientific Conference*, Vancouver, Canada. **(2nd place student poster prize)**

Elder, J.H., Prince, S.J.D., David, S.V. & Gallant, J. (2008) A geometric model predicts pattern selectivity of V1 neurons, *Gordon Research Conference on Sensory Coding and the Natural Environment,* Barga, Italy. **(Best poster award)**

Elder, J.H. & Estrada, F. (2008) A Bayesian multi-scale model of perceptual organization, *Annual Interdisciplinary Conference,* Jackson Hole, Wyoming.

Denis P. & Elder J.H. (2008) Efficient edge-based methods for estimating Manhattan frames in urban imagery, *GEOIDE Annual Scientific Conference,* Niagara Falls, ON. **(3rd place poster prize)**

Elder, J.H. (2008) Three-dimensionalizing surveillance networks, *GEOIDE Annual Scientific Conference,* Niagara Falls, ON.

Movahedi V. & Elder, J.H. (2008) Salient object statistics. *18th Annual Canadian Conference on Intelligent Systems*, Windsor, ON.

Elder, J.H., Prince, S.J.D., Hou, Y., David, S.V. & Gallant, J. (2007) A geometric model of V1 neural selectivity, *Annual Interdisciplinary Conference,* Jackson Hole, Wyoming.

Denis, P., Estrada, F., & Elder, J.H. (2007) Automatic estimation of vanishing points for single-view reconstruction from urban surveillance video, *PRECARN Intelligent Systems Conference*, Montreal, QC.

Denis, P., Estrada, F., & Elder, J.H. (2006) Single image 3D scene reconstruction for visual surveillance systems, *PRECARN Intelligent Systems Conference*, Victoria, BC.

Elder, J.H. (2006) Estimating nonlinear mechanisms underlying detection of narrowband stimuli using classification image analysis, *Annual Interdisciplinary Conference,* Jackson Hole, Wyoming.

Elder, J.H. (2005) Testing linear and nonlinear detection models using classification image analysis, *Annual Interdisciplinary Conference,* Jackson Hole, Wyoming.

Elder, J.H. (2003) Intelligent data fusion for aircraft navigation and disaster management, *GEOIDE Annual Meeting, Victoria, Canada.*

Elder, J.H. (2003) Visual intelligence for surveillance and telepresence applications, *IRIS/PRECARN Annual Meeting, Halifax, Canada.*

Velisavjlevic, L. & Elder, J.H. (2003) Eccentricity effects in the rapid visual encoding of natural images, *IRIS/PRECARN Annual Meeting, Halifax, Canada.*

Elder, J.H. (2002) Extraction of features from remote-sensed imagery for a search and rescue database, *GEOIDE Annual Meeting, Toronto, Canada.*

Elder, J.H. (2002) Visual intelligence for surveillance and telepresence applications, *IRIS/PRECARN Annual Meeting, Montreal, Canada.*

Elder, J.H. (2002) Applications of intelligent visual sensing technologies, *Payloads, Packages and Platforms: Organizing Networks for a Canadian Mars Mission Workshop,* Toronto.

Elder, J.H. (2001) Computational and perceptual issues in Enhanced/Synthetic Vision Systems, *Workshop on Enhanced and/or Synthetic Vision Systems,* Toronto.

Elder, J.H. (2001) Extraction of features from remote-sensed imagery, *GEOIDE Annual Meeting, Fredericton, Canada.*

Krupnik, A. & Elder, J.H. (2001) Extraction of lakes from satellite imagery, *GEOIDE Annual Meeting, Fredericton, Canada.*

Reeves, R. & Elder, J.H. (2001) Constructing more accurate terrain models from multiple DEMs and classification data, *GEOIDE Annual Meeting, Fredericton, Canada.*

Elder, J.H. (2001) Attentional methods for virtual reality and telepresence, *PRECARN/IRIS Annual Meeting, Ottawa*.

Amati, J. & Elder, J.H. (2001) Factors affecting the discrimination and perceived attitude of multiple transparent surfaces, *PRECARN/IRIS Annual Meeting, Ottawa*.

Dornaika, F. & Elder, J.H. (2001) Image registration for attentive panoramic sensing, *PRECARN/IRIS Annual Meeting, Ottawa*.

Velisavljevic, L. & Elder, J.H. (2001) The processing of local and global information in natural images, *York Conference 2001: Levels of Perception*.

Elder, J.H. (2000) Textures for helmet mounted synthetic environments. *National Research Council Flight Research Laboratory Head-Mounted Display Research Meeting*.

Velisavljevic, L. & Elder, J.H. (2000) Texture mapping terrain to optimize visual judgments of surface attitude, *GEOIDE Annual Conference, Calgary.*

Reeves, R., Elder, J.H. & Laidler, G. (2000) Towards a synthetic terrain database for search and rescue helicopters, *GEOIDE Annual Conference, Calgary.*

Elder, J.H., Wu, G. & Hou, Y. (2000) Foveated panoramic sensing. *PRECARN/IRIS Annual Meeting, Montreal*.

Elder, J.H., Velisavljevic, L. (1999) What is the optimal texture for perceiving surface attitude? *International Conference on Vision and Attention, York University.*

Elder, J.H. (1999) Perceptual factors in virtual reality and telepresence. *PRECARN-IRIS IX Annual Conference, Toronto.*

Elder, J.H. (1998). Invited Commentary on Y. Amit, "Tree-structured vision and selective attention," NEC/NYU Workshop on *Learning and Development in Vision, New York.*

Elder, J.H. (1996). Invited Commentary on Pessoa et al., "Finding out about filling in", *The Mind as a Scientific Object: an Interdisciplinary Seminar, Toronto*.

Elder, J.H. (1996). Are images one-dimensional? *2nd NEC Research Institute Vision Workshop, Princeton, NJ.*

Elder, J.H. (1995). Scale adaptation and blur estimation. *5th IRIS-PRECARN Conference, Vancouver*.

Elder, J.H. (1992). Integrating figure fragments. *Québec Inter-University Computer Vision Meeting, Montréal.*

Invited Talks

Elder, J.H. (2023) Fusing knowledge and data for computer vision applications, *Vector Institute for AI FastLane Program, Toronto, ON.*

Elder, J.H. (2023) The perception of shape from contour in humans and machines, *CVR Research Seminar, York University, Toronto, ON.*

Elder, J.H. (2021) The perception of shape from contour in humans and machines, *Research Seminar, Cerebrum, University of Montreal, Montreal, QC.*

Elder, J.H. (2019) Shape from contour, *Research Seminar, Centre for Vision Research, Brown University, Providence, RI.*

Elder, J.H. (2019) Gaze learning for automatic hockey videography, *Vector Institute for AI, Toronto, ON.*

Elder, J.H. (2019) 2D and 3D shape from contour, *Research Seminar, State University of New York, New York, NY.*

Elder, J.H. (2019) Intelligent systems for sustainable urban mobility, *ITE Seminar: Autonomous Vehicles, York University, Toronto, ON.*

Elder, J.H. (2017) Models of shape perception, *Vision Seminar Series, University of Pennsylvania, Philadelphia, PA.*

Elder, J.H. (2017) Perceptual organization of shape, *Loucks Lecture in the Neurophysiological Basis of Learning and Memory, Department of Psychology, University of Washington.*

Elder, J.H. (2017) Contours and the perceptual coding of images, *Graduate student lunch seminar, Department of Psychology, University of Washington.*

Elder, J.H. (2016) Adaptive Single-View 3D Scene Analysis, *School of Electronics Engineering and Computer Science, Peking University, China*

Elder, J.H. (2016) Single-View 3D Scene Analysis, *Faculty of Electronic Information and Electrical Engineering, Dalian University of Technology, China*

Elder, J.H. (2016) Single-View 3D Scene Analysis, *School of Remote Sensing and Information Engineering, Wuhan University, China*

Elder, J.H. (2016) Single-View 3D Scene Analysis, *School of Computing Science, Simon Fraser University, Burnaby, BC*

Elder, J.H. (2015) Visual perception: The ultimate big data problem, *Coast-to-Coast Seminar Series, Center for Interdisciplinary Research in the Mathematical and Computational Sciences, Simon Fraser University, Burnaby, BC.*

Elder, J.H. (2015) Interdisciplinary research in biological and computer vision: Challenges and opportunities, *Center for Imaging Science, Rochester Institute of Technology, Rochester, NY.*

Elder, J.H. (2015) Perceptual organization of shape, *Bristol Vision Institute, Bristol University, UK*.

Elder, J.H. (2015) Perceptual organization of shape, *Craik Club Seminar, Cambridge University, UK*.

Elder, J.H. (2013) Perceptual organization of shape, *Department of Computer Science, McGill University*.

Elder, J.H. (2013) Perceptual organization of shape, *Centre for Perceptual Systems, University of Texas, Austin*.

Elder, J.H. (2013) Dynamic activity mapping for sustainable urban environments, *York University CIVDDD Brownbag Seminar.*

Elder, J.H. (2012) 3DTown: The automatic urban awareness project, *Digifest 2012*, Toronto.

Elder, J.H. (2012) Perceptual organization of shape, *Centre for Vision Research, York University*.

Elder, J.H. (2012) 3DTown: The automatic urban awareness project, *Ontario Association for Remote Sensing Dinner Meeting*.

Elder, J.H. (2011) On grouping and formlets: The role of shape in perceptual organization, *University of Western Ontario Computer Science Seminar*.

Elder, J.H. (2010) On growth and formlets: Sparse multi-scale coding of planar shape, *University of Toronto Computer Vision Seminar*.

Elder, J.H. (2009) Perceptual segmentation of salient shapes, *Institut des Systèmes Intelligents et de Robotique, Université Pierre et Marie CURIE, Paris, France.*

Elder, J.H. (2009) Perceptual segmentation of salient shapes, *Universite Paris Descartes, France.*

Elder, J.H. (2009) Perceptual segmentation of salient shapes, *Max Planck Institute, Tubingen, Germany.*

Elder, J.H. (2009) Perceptual segmentation of salient shapes, *CNRS- Université Paul Sabatier, Toulouse, France.*

Elder, J.H. (2009) Attention is surprising, *Universite Paris Descartes, France.*

Elder, J.H. (2008) Cities, jungles and contours, *Centre for Intelligent Machines, McGill University, Montreal, Canada.*

Elder, J.H. (2008) Perceptual organization of contours, *Centre for Vision Science, University of Rochester, NY.*

Elder, J.H. (2007) A geometric model of V1 neural selectivity, *Centre for Vision Research, York University*.

Elder, J.H. (2005) Attentive people-finding, *GE Global Research, Schenectedy, NY.*

Elder, J.H. (2004) Statistical cue integration in human and machine vision, *Computer Science Department, University of Toronto, Canada.*.

Elder, J.H. (2003) Visual processing of contours, *Centre for Intelligent Machines, McGill University, Montreal, Canada.*

Elder, J.H. (2003) Visual processing of contours, *Department of Psychology, University of California, Los Angeles.*

Elder, J.H. (2003) Visual processing of contours, *Oxyopia Seminar Series, School of Optometry, University of California, Berkeley.*

Elder, J.H. (2003) Psychophysical estimation of edge detection mechanisms, *Smith-Kettlewell Eye Research Institute, San Francisco, CA.*

Elder, J.H. (2002) From edges to objects: visual processing of contours in human and machine, *University of Stirling.*

Elder, J.H. (2002) From edges to objects: visual processing of contours in human and machine, *University of Aston Neurosciences Research Institute*.

Elder, J.H. (2002) Are contours dead?, *University of Glasgow Psychology Department.*

Elder, J.H. (2001) Computation of visual contours in natural and artificial vision systems *University of British Columbia Psychology Department.*

Elder, J.H. (2001) Computation of visual contours in natural and artificial vision systems *McGill University Computer Science Department.*

Elder, J.H. (2001) Computation of visual contours in natural and artificial vision systems *University of Toronto Computer Vision Seminar.*

Elder, J.H. (2000) Are images one-dimensional? *Sarnoff Corporation, Princeton, NJ.*

Elder, J.H. (2000) The ecology of image contours. *NEC Research Institute, Princeton, NJ.*.

Elder, J.H. (2000) Computational modeling of stereoacuity for binocularly uncorrelated (2^{nd} order) stimuli: rectification is not enough. *McGill University Vision Research Seminar, Montreal, Canada.*

Elder, J.H. (2000) Are images one-dimensional? *York University Department of Mathematics Colloquium and Applied Mathematics Seminar.*

Elder, J.H. (1999) Are edges incomplete? *Dalsa Inc., Waterloo, Canada.*

Elder, J.H. (1997). What is the right model for the local blurring of natural images? *York University Centre for Vision Research Lecture Series*.

Elder, J.H. (1996). In defense of the contour code. *York University Centre for Vision Research Lecture Series.*

Elder, J.H. (1996). Computing contour closure. *Rutgers University Series on Human and Computer Vision, New Brunswick, New Jersey.*

Elder, J.H. (1995). Local and global problems in the visual processing of contour. *NEC Research Institute, Princeton, NJ.*

Elder, J.H. (1995). Local and global problems in the visual processing of contour. *Cambridge Basic Research, Cambridge, MA.*

Conference Demonstrations

3DTown: The automatic urban awareness project. *2011 GEOIDE Scientific Conference*, Toronto.

3DTown: The automatic urban awareness project. *2011 OCE Discovery Conference*, Toronto.

Three-dimensionalizing surveillance networks. *2009 GEOIDE Scientific Conference*, Vancouver.

Attentive panoramic sensing for visual telepresence. 2*002 IRIS/PRECARN Conference*, Montreal.

Foveated panoramic sensing. *2000 IRIS/PRECARN Conference*, Montreal.

Print Media

Sept 11, 2019. Quoted commentary on shape perception research, *Scientific American*. https://www.scientificamerican.com/article/no-bones-about-it-people-recognize-objects-by-visualizing-their-skeletons/

July 30, 2011. Seeing Machines – York University's Elder Lab is developing cameras that behave like the human eye. *The National Post*, p. A6. *http://news.nationalpost.com/2011/07/30/seeing-machines-developing-cameras-that-can-see-like-humans/#more-82570*

Broadcast Media

Feb 9, 2019. Interview with The FEED on 1059TheRegion radio on our attentive puck tracking technology.

July 30, 2011. Not quite outer space but…, CBC News: Toronto (CBLT-TV)

July 30, 2011. Discussion with James Elder, Professor of Engineering and Psychology, York University… Here & Now (CBLA-FM).

Online Media

Oct 11 2022	Spotting Frankensteins: Why humans beat AI at detecting freakish fakes, *Bulletin of the Atomic Scientists*.
Sept 16 2022	Even smartest AI models don't match human visual processing, *ScienceDaily*.
Sept 8 2021	The Brain of a Hockey Fan, *Inside Science*.

Jul 13 2011	Unmanned aerial vehicle taking a close look at York University − in 3D. York University Media Relations.

Recent Y-File Articles

Nov 16, 2020	York researchers to develop critical innovations for detection of the COVID-19 virus
Sept 15 2019	New website showcases the breadth and depth of AI research, teaching and learning at York U
Jun 9 2019	Lassonde showcases innovative research projects during second annual Research Day
Jan 7 2019	York researchers invent novel computer vision system for automatic hockey videography
Dec 5 2018	York researchers invent novel computer vision system to extract 3D building models from a single image
Nov 26 2018	Co-Chairs and members of the Artificial Intelligence and Society Task Force announced
Apr 1 2018	Ten researchers earn York Research Chair appointments
Jul 12 2017	Professor James Elder wins major ORF grant to support sustainable urban mobility

RESEARCH LEADERSHIP ACTIVITIES

AI & Society

In its 2018-2023 Strategic Research Plan, York University identified the *integration of Artificial Intelligence into Society* as a key opportunity for strategic research development. I was asked to assemble and Co-Chair a new ***Task Force on AI & Society***, co-sponsored by VPRI and the Provost's office. My Co-Chair Prof. Pina D'Agostino (Osgoode) and I recruited 10 leading researchers from seven faculties as well as representatives of VPRI and the Provost's office to conduct a sweeping review of AI-related activities at York and to chart a course for future AI & Society research development. Our findings were published in Fostering the Future of Artificial Intelligence: Report from the York University Task Force on AI & Society. This report has already been influential in guiding the expansion of AI & Society research at York. Three initiatives of note:

1) With Prof. D'Agostino and Prof. Marin Litoui (LA&PS, EECS), I developed a new proposal for a three-year $450,000 research project called **AI Systems: Engineering, Governance & Society (AI-EGS)**, under the university's new Catalyzing Interdisciplinary Research Clusters initiative. Led by myself, Prof. D'Agostino and Litoui, this project brings together 20 faculty members from 5 faculties to work together on strategic interdisciplinary research projects that address the challenges of safe, reliable and inclusive integration of AI systems into society. The project officially commenced late in 2021.

2) In line with the Task Force Report, AI & Society has been selected as one of four key strategic research areas for the new York University Markham Campus, which will open doors in

2023/24. With Prof. D'Agostino, I Co-Chair the **AI & Society Markham Research Cluster Committee**, which has now formulated strategic research directions for the new campus.

3) A key recommendation of the Task Force Report is the establishment of a new Organized Research Unit (ORU) in the area of AI & Society. With Prof. D'Agostino, I have led the development of a charter proposal for a new ORU called the **Centre for AI & Society (CAIS)**. Bringing together 38 York faculty members from seven different faculties, CAIS officially launched in July of this year, with Prof. D'Agostino and I serving as Co-Directors.

Collaborative Research Projects
I have spearheaded numerous multi-sector, interdisciplinary collaborative projects. I currently lead the 5-year $12M ($4M cash) ORF-RE Intelligent Systems for Sustainable Urban Mobility (ISSUM) project involving 5 laboratories at two universities, 2 public sector and 7 industry partners. From 2016-2021, I led the 6-year $1.65M NSERC CREATE Training Program in Data Analytics and Visualization (NSERC CREATE DAV) involving 9 laboratories at 4 universities and 17 industry partners. I maintain active collaborations with researchers in the UK (Southampton University, Aston University, University of Surrey), the US (New York University, Loyola University), China (Dalian University) and Singapore (A*Star Research).

In response to the COVID Pandemic crisis, I led a successful Canada Foundation for Innovation (CFI) Exceptional Opportunities Fund proposal, ***Agile AI-Powered Autonomous Robotics for COVID-19 Disinfection***. This collaborative project with Canadian industry (CrossWing Inc) and public sector institutions (Baycrest Health Sciences) reduce environmental risk and protect our most vulnerable from transmissible pathogens in clinical and long-term care environments.

With Prof. Michael Jenkin (Lassonde), I have co-led a new $3M CFI proposal, ***Social Robots and Telexistence Evaluation Suite (SRTES)*** that will build on this work and other related projects at York to develop a new facility for interdisciplinary research on human-robot interaction in diverse mixtures of in-person and remote, real, virtual and augmented contexts, with applications to clinical and long-term care.

I continue to collaborate closely with industry (TransPlan, Esri Canada, CrossWing Inc, Cloud Constable) and public sector (Ministry of Transportation Ontario) partners on research related to traffic analytics, smart cities, and social and service robotics.

Canada First Research Excellence Fund (CFREF) Initiatives
I am a Core Member of York's $33M CFREF-funded Vision: Science to Applications (VISTA) research program, and have served on the VISTA Leadership Committee and as Chair of its Partnership Committee. I was one of the main writers of this successful CFREF research proposal, and have recently served on the Strategy Committee and as a writer and co-applicant for a new CFREF research proposal called ***Connected Minds***, submitted in August 2022.

Centre for Vision Research (CVR)
I am a Faculty Member of the Centre for Vision Research and from 2017-2022 served as its Seminar Coordinator and on its Steering Committee.

Editorial
I have served on the editorial boards for four international journals and on review committees for 73 computer vision conferences. From 2004-2017 and from 2021 to the present I have served on the

standing review committee for the Vision Sciences Society, the premier international vision science organization. I am currently serving as Guest Editor for a *Frontiers* special issue on *Perceptual Organization in Computer and Biological Vision.*

Editorial Boards

2021-present	Editorial Board, *Frontiers in Computer Vision*
2003- present	Editorial Board, *ACM Transactions on Applied Perception*
2022-2023	Guest Editor, *Frontiers Research Topic on Perceptual Organization in Computer and Biological Vision*
2008-2023	Editorial Board, *Journal of Vision*
2014-2016	Guest Editor, *Vision Research*, Special Issue on Vision and the Statistics of the Natural Environment
2007-2012	Editorial Board, *IET Computer Visio*n
2007	Guest Editor, *Journal of Vision*, Special Issue on Perceptual Organization and Neural Computation
2006	Guest Editor, *Journal of Vision*, Special Issue on Finding Visual Features: Using Stochastic Stimuli to Discover Internal Representations

Conference Organization

2022	Co-Organizer, Vision Sciences Society Symposium: Perceptual Organization - Lessons from Neurophysiology, Human Behavior, and Computational Modeling
2021	Co-Chair, Doctoral Consortium, International Conference on Computer Vision
2019	Co-Organizer, Fields/VISTA Mathematics of Vision Workshop, Toronto, Canada.
2019	Co-Chair, Symposium on the geometry of 3D shape and scene perception, European Conference on Visual Perception, Leuven, Belgium.
2018	Program Co-Chair, Conference on Computer and Robot Vision, Toronto, ON
2017	Program Co-Chair, Conference on Computer and Robot Vision, Edmonton, AB
2017	Organizing Committee, Big Data and Information Analytics Conference, Toronto, ON
2017	Session Organizer & Chair, Annual Interdisciplinary Conference, Breckenridge, CO.
2016	Session Organizer & Chair, Annual Interdisciplinary Conference, Breckenridge, CO.
2015	Organizer and Chair, Big Data and Intelligent Transportation Systems Panel, EAI International Conference on Big Data and Analytics for Smart Cities, Toronto.
2015	Organizer and Chair, York University Centre for Vision Research International Conference on Perceptual Organization, Toronto.
2014	Session Organizer, Annual Interdisciplinary Conference, Jackson Hole, WY.
2013	Local Host, Configural Processing Consortium Meeting, Toronto.

2013	Co-Organizer, Sustainable Urban Models Augmentation Consortium (SUMAC) Meeting, Toronto.
2006	Organizer and Chair (with Jeff Siskind), 5th IEEE International Workshop on Perceptual Organization in Computer Vision, New York, NY.
2006	Session Organizer, Gordon Research Conference on Sensory Coding and the Natural Environment: Scene Statistics and Computer Vision
2005	Organizer, Natural Image Statistics and Applications Session, International Conference on Computational Vision in Neural and Machine Systems, Toronto, ON
2001	Organizer, Workshop on Enhanced and/or Synthetic Vision, Toronto Congress Centre

Conference Committees

2023	Member, Review Committee, International Conference on Computer Vision (ICCV), Paris
2023	Member, Program Committee, Computer and Robot Vision Conference (CRV), Montreal, QC
2023	Member, Review Committee, Winter Conference on Applications in Computer Vision (WACV), Waikoloa, HI
2022	Member, Review Committee, Asian Conference on Computer Vision (ACCV), Macau, China
2022	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), New Orleans, LA
2022	Member, Program Committee, Workshop on Multimedia Content Analytics in Sports, Lisbon, Portugal
2022	Member, Program Committee, Computer and Robot Vision Conference (CRV), Toronto, ON
2022	Member, Program Committee, ICPR Workshop on AI for De-escalation: Automated Systems for De-escalating Conflicts in Military and Civilian Contexts
2022	Member, Technical Committee, International Conference on Pattern Recognition
2022	Member, Technical Committee, Computer Vision for Winter Sports Workshop
2022	Member, Program Committee, AAAI Conference on Artificial Intelligence
2022	Member, Review Committee, Winter Conference on Applications in Computer Vision (WACV), Waikoloa, HI
2021-22	Review Committee, Vision Sciences Society
2021	Member, Review Committee, British Machine Vision (BMVC), UK
2021	Member, Review Committee, International Conference on Computer Vision (ICCV), Montreal
2021	Member, Program Committee, Computer and Robot Vision Conference (CRV), Burnaby, BC

2021	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Nashville, TN
2020	Member, Review Committee, European Conference on Computer Vision (ECCV), Glasgow.
2020	Member, Program Committee, Computer and Robot Vision Conference (CRV), Ottawa, ON
2020	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, WA
2019	Member, Review Committee, International Conference on Computer Vision (ICCV), Seoul, Korea
2019	Member, Program Committee, Computer and Robot Vision Conference (CRV), Kingston, ON
2019	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, CA
2004- 2017	Review Committee, Vision Sciences Society
2016	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Las Vegas, Nevada
2016	Member, Program Committee, Computer and Robot Vision Conference (CRV), Victoria, BC
2015	Member, Program Committee, Computational Models of the Visual Cortex (CMVC), New York
2015	Member, Review Committee, Neural Information Processing Systems (NIPS), Montreal
2015	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision (ICCV), Chile
2015	Member, Program Committee, Computer and Robot Vision Conference (CRV), Halifax, NS
2015	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Boston, Mass
2014	Member, Review Committee, Neural Information Processing Systems (NIPS), Montreal
2014	Member, Review Committee, European Conference on Computer Vision (ECCV), Zurich, Switzerland
2014	Member, Program Committee, Computer and Robot Vision Conference (CRV), Montreal, Quebec
2014	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Columbus, Ohio
2013	Member, Review Committee, Neural Information Processing Systems (NIPS), Lake Tahoe

2013	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision (ICCV), Australia
2013	Member, Program Committee, Canadian Conference on Computer and Robot Vision (CRV), Regina.
2013	Member, Program Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Portland, Oregon
2012	Member, Review Committee, Neural Information Processing Systems (NIPS), Lake Tahoe.
2012	Member, Review Committee, European Conference on Computer Vision (ECCV), Florence.
2012	Member, Program Committee, Canadian Conference on Computer and Robot Vision (CRV), Toronto.
2012	Member, Program Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Rhode Island
2011	Member, Programme Committee, Applied Perception in Graphics and Visualization (APGV), Toulouse
2011	Member, Programme Committee, Canadian Computer and Robot Vision Conference (CRV), St. John's, Newfoundland
2011	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Colorado Springs
2010	Member, Review Committee, European Conference on Computer Vision (ECCV), Crete, Greece
2010	Member, Programme Committee, Applied Perception in Graphics and Visualization (APGV), Los Angeles
2010	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), San Francisco, CA
2009	Member, Review Committee, Neural Information Processing Systems (NIPS), Vancouver, Canada
2009	Member, Review Committee, International Conference on Computer Vision (ICCV), Kyoto, Japan
2009	Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Miami, FL
2009	Member, Programme Committee, Applied Perception in Graphics and Visualization (APGV), Crete, Greece
2009	Member, Programme Committee, Canadian Conference on Computer and Robot Vision (CRV), Kelowna, BC
2008	Member, Programme Committee, Neural Information Processing Systems (NIPS), Vancouver, Canada
2008	Member, Programme Committee, European Conference on Computer Vision (ECCV), Marseille, France

2008	Member, Programme Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Anchorage, AL
2008	Member, Programme Committee, Applied Perception in Graphics and Visualization (APGV), Los Angeles, CA
2008	Member, Programme Committee, IEEE Computer Society Conference on Perceptual Organization in Computer Vision (POCV), Anchorage, AL
2008	Member, Programme Committee, Canadian Conference on Computer and Robot Vision (CRV), Windsor
2007	Member, Programme Committee, Workshop on Interactive Computer Vision, Rio de Janeiro, Brazil
2007	Member, Programme Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Minneapolis, MN
2007	Member, Programme Committee, Symposium on Applied Perception in Graphics and Visualization (APGV), Tubingen, Germany
2007	Member, Programme Committee, Canadian Conference on Computer and Robot Vision (CRV), Montreal
2006	Member, Programme Committee, Symposium on Applied Perception in Graphics and Visualization (APGV), Boston, Mass.
2006	Member, Programme Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), New York, NY
2006	Member, Programme Committee, European Conference on Computer Vision (ECCV), Graz, Austria
2006	Member, Programme Committee, Canadian Conference on Computer and Robot Vision (CVPR), Quebec City
2005	Member, Programme Committee, IEEE International Conference on Computer Vision (ICCV), Beijing, China
2005	Member, Programme Committee, Symposium on Applied Perception in Graphics and Visualization (APGV), A Coruna, Spain
2005	Member, Programme Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), San Diego, CA
2005	Member, Programme Committee, Canadian Conference on Computer and Robot Vision (CRV), Victoria, BC
2004	Member, Programme Committee, ACM SIGGRAPH Symposium on Applied Perception in Graphics and Visualization (APGV), Los Angeles, CA
2004	Member, Programme Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Washington, DC

2004	Member, Programme Committee, IEEE Workshop on Perceptual Organization in Computer Vision (POCV), Washington, DC
1999	Member, Programme Committee , 7th IEEE International Conference on Computer Vision (ICCV), Corfu, Greece
1997-2003	Human Performance in an Aerospace Environment Theme Committee, Centre for Research in Earth and Space Technology

Panels

2023	Meet the Professors, Vision Sciences Society Meeting, St. Pete Beach, FL
2023	Future of AI: Trends, Challenges and Prospects, Canadian Conference on Artificial Intelligence, Montreal
2020-2022	Adjudicating Committee, Vector Scholarship in AI, Vector Institute
2018	Student and Postdoc Workshop: Getting that Faculty Job, Vision Sciences Society Meeting, St. Pete Beach, FL
2017	Expert Discussion Panel, Workshop on Mutual Benefits of Cognitive and Computer Vision, International Conference on Computer Vision (ICCV), Venice, Italy
2017	Expert Discussion Panel, WA Challenge: Detecting Symmetry in the Wild, International Conference on Computer Vision (ICCV), Venice, Italy
2008	U.S. Department of Energy Pacific Northwest National Laboratory Proliferation Deterrence Merit Review for Project PDP06-43, *Image Recognition and Classification Based on Object Parts*, Temple University, Philadelphia, PA

External Tenure, Promotion and Endowed Chair Reviews

2020	National Research University – Higher School of Economics, Moscow, Russia
2019	University of California, Irvine
2017	University of Ottawa
2017	University of Ottawa
2017	University of California, Irvine
2016	University of California, Los Angeles
2013	Concordia University, Montreal
2009	City University of New York
2008	University of Western Ontario

2007	University of California, Berkeley

Professional Consulting

2022-	Member, Advisory Board, The Adaptive Mind, Germany
2021-	Member, Professional Advisory Board, Monsters Aliens Robots Zombies Inc., Toronto, Canada
2018	Expert Consultant for Paul Hastings LLP, Washington, DC.

Grants Refereed

Human Frontier Science Program

NSF Grants

NSF Career Grants

NSERC Discovery Grants

FCAR Collaborative Grants

MITACS Accelererate Grants

Publications Refereed

ACM SIGGRAPH

ACM Transactions on Applied Perception

Acta Psychologica

Brain Research

Cognitive Psychology

Computer Vision and Image Understanding

Current Biology

European Conference on Visual Perception

IEEE Conference on Computer Vision and Pattern Recognition

IEEE Signal Processing Letters

IEEE Transactions on Image Processing

IEEE Transactions on Pattern Analysis and Machine Intelligence

IEEE Transactions on Systems, Man and Cybernetics

Image and Vision Computing

Institution of Engineering and Technology Image Processing

International Conference on Computer Vision

International Conference on Pattern Recognition

International Joint Conference On Artificial Intelligence

International Journal of Computer Vision

Journal of Cognitive Neuroscience

Journal of Neurophysiology

Journal of the Optical Society of America

Journal of Vision

Network: Computation in Neural Systems

Neural Computation

Neural Information Processing Systems

Perception

Perception & Psychophysics

PLOS Computational Biology

Proceedings of the National Academy of Sciences

Psychological Review

Psychological Science

Psychonomic Bulletin & Review

Scientific Reports

Seeing and Perceiving (formerly Spatial Vision)

Vision Interface

Vision Research

Vision Sciences Society

Professional Associations

Licensed Professional Engineer, Professional Engineers Ontario

Senior Member, Institute for Electrical and Electronic Engineers (IEEE)

TRAINING AND SUPERVISORY EXPERIENCE

Undergraduate Level

Courses Taught

2022-2023	EECS 4404B.3	Introduction to Machine Learning and Pattern Recognition
2020-2021	EECS 4422	Computer Vision
2018-2019	EECS 4422	Computer Vision
2017-2018	EECS 2011Z.3	Fundamentals of Data Structures
2015-2016	EECS 2011E.3	Fundamentals of Data Structures
2014-2015	EECS 2011Z.3	Fundamentals of Data Structures
2013-2014	CSE 4404A.3	Introduction to Machine Learning and Pattern Recognition
2013-2014	CSE 2011Z.3	Fundamentals of Data Structures
2012-2013	PSYC 3031A.3	Intermediate Statistics Laboratory
2012-2013	CSE 4404A.3	Introduction to Machine Learning and Pattern Recognition
2011-2012	CSE 4404A.3	Introduction to Machine Learning and Pattern Recognition
2011-2012	CSE 2011Z.3	Fundamentals of Data Structures
2009-2010	CSE 2011Z.3	Fundamentals of Data Structures
2008-2009	CSE 3101Z.3	Design and Analysis of Algorithms
2007-2008	CSE 3101E.3	Design and Analysis of Algorithms
2006-2007	CSE 3101B.3	Design and Analysis of Algorithms
2003-2004	CSE 3101N.3	Design and Analysis of Algorithms
2001-2002	PSYC 3510D.3	Special Topics: Psychophysics and Computers
2000-2001	PSYC 3510D.3	Special Topics: Psychophysics and Computers
1999-2000	PSYC 3510D.3	Special Topics: Psychophysics and Computers
1997-1999	PSYC 2022M.3	Introduction to Inferential Statistics
1996-1998	PSYC 2020C.6	Introduction to Psychological Data

Courses Developed

2011-2012	CSE 4404	Introduction to Machine Learning and Pattern Recognition
1999-2000	PSYCH 3510	Special Topics: Psychophysics and Computers

Invited Lectures

2016-2017	NSERC CREATE Data Analytics & Visualization Summer School
2011-2012	CSE 1001 Research Directions in Computing
2007-2016	York CVR Vision Science Summer School

Undergraduate Honours Theses, Independent Readings and Senior Projects

Dates	Name	Thesis / Project Title	Current Position
2016-2017	Juan Loja, Amanpreet Wallia, Tangeena Islam	*Embedded Eye*	
2016-2017	Kristen McIntosh	*Endogenous and exogenous attention in serial and parallel search*	

2013-2014	Yuen Lau, Marcin Matynia	*Operational transformation software*	
2011-2012	Albert VanderMeulen	*Automatic picture book generator*	*Senior Software Engineer, SiteScout*
2011-2012	Galina Goren	*Psychophysical methods for studying feedback in the object pathway*	
2010-2011	Alex Yakubovich	*Accelerating formlet-based representations of shape*	
2009-2010	Thomas Young	*Low cost three dimensional face scanning system*	
2008-2009	Kiret Dhindsa	*Boosting methods for the estimation of geometric receptive field models of V1 neurons*	
2007-2008	Aryan Kamyab	*Selectivity of exogenous attention mechanisms for facial cues*	
2007-2008	Brent Ruston	*Low-cost 3D face scanning system*	*Lawyer, Asscoiate, Anderson MacKeigan LLP, Toronto*
2006-2007	Dahlia Balaban	*Probing visual attention in natural images*	*Family Medicine Resident, Mount Sinai Hospital, Toronto*
2005-2006	Shree Kargutkar	*Spatial attention and natural images*	*Research Analyst, Sprott Asset Management*
2004-2005	Sharmistha Chaudhuri	*Estimating orientation in natural images*	*Lead Software Engineer, GE Healthcare*
2004-2005	Miro Kuc	*Efficient models of natural 2D shapes*	*Programmer Analyst, Molson Coors Canada, Great Lakes Fishery*
2003-2004	Deepak Lakra	*Top-down effects on brightness perception*	
2003-2004	Mikhail Sizintsev	*Face detection for attentive wide-field sensor*	*Computer Scientist, SRI International Sarnoff*
2002-2003	Yubin Liao	*Velocity control for attentive panoramic sensor*	
2002-2003	Xin Liu	*Face detection for attentive panoramic sensor*	
2000-2002	Yaniv Morgenstern	*Visual detection efficiency of curvilinear patterns of oriented elements in clutter*	*Postdoctoral Fellow, University of Giessen*
1999-2000	Aarlenne Khan	*Effects of visual eccentricity on visual recall.*	*Associate Professor, University of Montreal*
1999-2000	Natasha Martin	*Perceptual factors in visual telepresence*	
1999-2000	Philip Jaekl	*Visual fusion and surface attitude judgements of transparent textured surfaces*	

1999-2000	Carl Gaspar	*Comparison of task and psychophysical methodology in estimating the efficiency of visual edge detection*	
1998-1999	Dmitry Beniaminov	*Characterizing uncertainty in visual edge classification*	Senior Manager of Digital Operations, St. Joseph Media
1998	Linda Ku	*Contour-based image compression: Huffman encoding and reconstruction of a line segment representation*	
1998-1999	Branka Otasevic	*Contour-based image compression: spline encoding of photometric contour properties*	IT Solution Developer , TD Bank
1997	Richard Goldberg	*A novel contour-based image editing system*	Human Factors Specialist, IBM
1996-1997	Scott Best	*Classifying contours in natural images*	

NSERC and Lassonde Undergraduate Summer Research Award Students

2023	Kimia Rajeifar	*Ultra-wideband sensing for wheelchair follow-me technologies*	*Undergraduate student, York University*
2023	Kumar Vaibhav Jha	*Long-term non-causal multiple-object tracking*	*Master's student, York University*
2023	Stefan de Lasa	*Fusing geometry and semantics for monocular depth estimation*	*Undergraduate student, University of Toronto*
2023	Julian Forsyth	*Integrating human tracking and obstacle avoidance for robot follow-me control*	*Undergraduate student, York University*
2023	Kuimou Yu	*Monocular 3D object shape from silhouette*	*Undergraduate student, York University*
2023	Prachurya Deepta Adhikary	*Markov Chain Monte Carlo method for generating naturalistic shapes*	*Undergraduate student, York University*
2020	Xingye Fan	*Analyzing shape selectivity in deep networks trained on ImageNet*	*Master's student, University of Waterloo*
2020	Qijin Xu	*Automatic attempt on goal detection in hockey videography*	*Full-stack Developer, KnockNow*
2020	Anto Nanahji	*Evaluating the efficacy of anonymized virtual 3D renderings of human activity*	*Undergraduate student, York University*
2020	Fasil Cheema	*Probabilistic integration of temporal and appearance cues for person re-ID*	*Undergraduate student, York University*
2018	Michael Dowling	*Application of attentive sensing to sports videography*	*Software development engineer, Amazon Web Services*

2018	Hengchao Xiang	*Single-view 3D perception in humans and machines*	*Software engineer, IBM*
2018	Benjamin Correia	*Optimizing vehicle counting algorithms for runtime*	*Software developer, Fortinet*
2018	David Kennedy	*Feedback in hierarchical grouping models*	*Master's student, McMaster University*
2018	Connor Dear	*Video analytics for highway traffic management*	*Software development contractor*
2018	Ragheb Abunahla	*Single-view 3D reconstruction of buildings using the Manhattan constraint*	*Technology analyst, Accenture*
2016	Juan Loja	*Smooth pursuit for traffic video systems*	*Software developer, Lexpand Legal Professional Corporation*
2016	Amanpreet Walia	*A new dual-mirror attentive sensor*	*AI researcher (computer vision), Huawei Canada*
2016	Praise Ayorinde	*Virtualized & integrated video analytics (VIVA)*	*Software engineer, Amazon*
2016	Sherief Aboelaze	*Attentive sensing for sports videography*	
2016	Kristen Mcintosh	*Integration of endogenous and exogenous attention*	*Data engineer, RBC*
2015	Ryan Dowling	*Hardware and control for attentive tracking system*	*Associate, Altas Partners*
2015	Juan Loja	*Algorithms and software for attentive tracking system*	
2015	Amanpreet Walia	*Embedded computing for attentive tracking system*	
2013	Yuping Lin	*Evaluating trackers for sports video*	
2012	Yuen Lau	*Occupancy measurement using the Kinect sensor*	*Co-founder, UniSwipe*
2011	Herman Badwal	*Pedestrian tracking*	*Software developer, IBM Canada*
2010	Alex Yakubovich	*Accelerating formlet-based representations of shape*	*Data Scientist, Uken Games*
2009	Alex Yakubovich	*Unsupervised calibration of pan/tilt/zoom highway cameras*	*Data Scientist, Uken Games*
2008	Owais Khan	*Supervised learning for target detection and contour grouping*	*Design Engineer, Evertz*
2006	Hassan Masoom	*Streaming video from an attentive wide-field sensor*	

2005	Wendy Ng	*High-level determinants of brightness perception*	
2005	Ivan Makarenka	*3D facial shape estimation and rendering*	*Software Engineer, IBM Toronto*
2005	Marie Jacob	*Modeling 2D shape projections*	*PhD student, University of Pennsylvania*
2003	Michael Sizintsev	*Face detection for attentive panoramic sensor*	*Computer Scientist, SRI International Sarnoff*
2002	Yubin Liao	*Attentive panoramic sensor design for remote learning application*	
2002	Xin Liu	*Automatic face detection for remote learning*	

Research at York (RAY) Undergraduate Students

2023	Jenny Ren	*Integrating kinematics and appearance for reliable wheelchair follow-me tracking*	*Undergraduate student. University of Waterloo*
2022	Kumar Jha	*Evaluation of object detectors and trackers for intersection traffic analytics*	*Master's student. York University*
2022	Mohammed Fulwala	*Automatic jersey number identification for hockey*	
2022	Kuimou Yu	*Pedestrian detection for small electric vehicles*	
2019	Xingye Fan	*Conversion of LS3D from MATLAB to C#*	*Master's student, University of Waterloo*
2018	Fei Fei Zheng	*Real-time 3D visualization of crowd dynamics*	*Software developer, IBM*
2017-2018	Jun-Lin Chen	*Application of attentive sensing to distance learning*	
2017-2018	Konstantin Bolshakov	*Attentive sensor 3.2*	
2016-2017	Kevin Joseph	*Estimating coarse 3D shape from the bounding contour*	
2016-2017	Kartikeya Bhargava	*Attentive sensor time synchronization*	
2012	Oyinda Daramola	*Improvements to PictureBook*	

International Visiting Undergraduate Students

2016-2017	Yuchi Ma	*Generative Model for Highway Traffic Understanding*	*PhD student, University of Wisconsin-Madison*
Sept-Dec 2014	Mandy Chan		*Beijing University*
Jun-Aug 2013	Ruozhu Li		*University of Electronic Science and Technology of China*
May-Jul 2011	Vishal Kumar		*IIT Kharagpur, India*

Undergraduate Research Assistants

2022-2023	Xiao Chen	*Ground-truthing hockey video for long-term player tracking*
2022-2023	Kumar Vaibhav Jha	*Evaluation of object detectors and trackers for intersection traffic analytics*
2021-2022	Ahmed Al-Mukhtar	*Long-term visual tracking of hockey players*
2020-2022	Ziqi (Doris) Zhou	*Software development for sports video tracking*
2020-2021	Xingye Fan	*Analyzing shape selectivity in deep networks trained on ImageNet*
2020-2021	Anto Nanahji	*Evaluating the efficacy of anonymized virtual 3D renderings of human activity*
2017-2018	Jun-Lin Chen	*Web client/server software for Attentive Sensor AS4.1*
2017-2018	Konstantin Bolshakov	*Hardware for Attentive Sensor AS3.1*
2015-2016	Juan Loja	*Fast attentive sensing for smooth pursuit*
2014-2015	Kartikeya Bhargava	*Attentive sensor system software port*
2014	Mingbin Xu	*Computer vision software and dataset repository*
2003-2004	Christina Habberjam	*Webmaster,Graphic Designer and Laboratory Librarian*
2001-2002	Ingrid Verhoecx	*Organization of literature database*
2000-2001	Jazmine Orprecio	*Organization of literature database*
2000	Joe Amati	*Visual fusion and surface attitude judgements of transparent textured surfaces*
1999-2000	Michael Marder	*Organization of literature database*
1998	Miriam Kuruvilla	*Extension of adaptive psychophysical threshold measurement software*
1998	Richard Platel	*Development of software for a psychophysical investigation of texture fusion.*

1998	Nicholas Toth	*Development of software for measuring psychophysical thresholds using the Quest procedure in a Linux environment*
1997-1998	Stanislav Winitsky	*Software development for contour-based image compression.*
1997-1998	Don MacLean	*Psychophysical investigation of contour classification.*
1996-1998	Greg Pintilie	*A Khoros-based system for visual psychophysics*

Graduate Level

Graduate Program Affiliations

Member, Graduate Program in Electrical Engineering and Computer Science, York University
Member, Graduate Program in Psychology, York University
Associate Member, Graduate Program in Mathematics & Statistics, York University

Courses Taught

2022-2023	EECS 5327B.3	Introduction to Machine Learning and Pattern Recognition
2021-2022	PSYC 6225A /EECS 6324	Computational Models of Visual Perception
2020-2021	EECS 5323	Computer Vision
2019-2020	EECS 6323	Advanced Topics in Computer Vision
2019-2020	PSYC 6225A /EECS 6390D	Computational Modeling of Visual Perception
2018-2019	PSYC 6256M	Principles of Neural Coding
2018-2019	EECS 5323	Computer Vision
2014-2015	CSE 6390D/ PSYC 6750B	Computational Modeling of Visual Perception
2014-2015	PSYC 6228	Applications in Vision Science
2013-2014	CSE 5327A	Introduction to Machine Learning and Pattern Recognition
2012-2013	CSE 6390D/ PSYC 6750B	Computational Modeling of Visual Perception
2012-2013	PSYC 6256M	Principles of Neural Coding
2012-2013	CSE 5327A	Introduction to Machine Learning and Pattern Recognition
2011-2012	CSE 5327A	Introduction to Machine Learning and Pattern Recognition
2010-2011	PSYC 6256M	Principles of Neural Coding
2010-2011	CSE 6390D/ PSYC 6750B	Computational Modeling of Visual Perception
2008-2009	CSE 6400	Computer Engineering Research Project
2008-2009	PSYC 6130C	Univariate Analysis
2008-2009	CSE 6400	Computer Engineering Research Project
2008-2009	PSYC 6130C	Univariate Analysis
2007-2008	CSE 6390D/ PSYC 6750B	Computational Modeling of Visual Perception
2006-2007	PSYC 6130A	Univariate Analysis
2005-2006	PSYC 6130A	Univariate Analysis
2005-2006	CSE 6390D/ PSYC 6750B	Computational Modeling of Visual Perception
2003-2004	CSE 6390D/ PSYC 6750B	Computational Modeling of Visual Perception
2001-2002	PSYC 6750B	Computational Modeling of Visual Perception
1999-2000	PSYC 6750B	Computational Modeling of Visual Perception

Courses Developed

2011-2012	CSE 5327A	Introduction to Machine Learning and Pattern Recognition
2010-2011	PSYC 6526M	Principles of Neural Coding
1999-2000	PSYC 6750B	Special Topics: Computational Modeling of Visual Perception

Invited Lectures

2014	Perceptual Organization Summer School, Leuven, Belgium
2012	Computational Vision Summer School, Tubingen, Germany
2012-2013	BIOL 5149 Applications in Vision Science: Attentive Sensing
2008	Canadian Institute for Advanced Research Programme in Neural Computation and Adaptive Perception Summer School

Graduate Student Supervision

Dates	**Name**	**Degree**	**Program**	**Thesis**	**Current Position**
Sept 2023-	Kumar Vaibhav Jha	MSc	EECS	Long-term non-causal tracking	
May 2023-	Tasneem Naheyan	PhD	EECS	Linear perspective for single-view 3D scene perception	
Sept 2022-	Bardia Esmaeili	PhD	EECS	TBD	
Sept 2022-	Aleksander Trajcevski	PhD	EECS	Fusing reasoning with deep learning for monocular depth estimation	
Sept 2022-	Shreejal Trivedi	MSc	EECS	Reliable vision-based highway traffic analytics	
Sept 2022-	Nima Vahdat	MSc	EECS	Graph neural networks for object perception	
Sept 2022-	Mohammad Akhavan	MASc	EECS	TBD	
Sept 2022-	S.M. Hossein Hosseini	MASc	EECS	Geometry-driven monocular depth estimation	
Sept 2021-	Sajjad Savoji	MSc	EECS	3D traffic analytics at intersections	
Sept 2021-	Thao Tran	MSc	EECS	Recovering 3D vehicle shape from symmetry	
Sept 2020-	Tenzin Chosang	MA	Psych	Perceptual contour completion	
Sept 2020-	Nizwa Javed	PhD	EECS	Attentive sensing for social machine intelligence	
Sept 2018-	Mariya Koshkina	PhD	EECS	Unsupervised learning for sports videography	
Sept 2016-	Gong Cheng	PhD	EECS	Adaptive road segmentation	
Sept 2020-Apr 2023	Tasneem Naheyan	MASc	EECS	Using linear perspective to extend the range of depth cameras for mobile robot applications	
Sept 2019-Mar 2023	Keyi Liu	MASc	EECS	Sparse shape coding for improved instance segmentation	
Sept 2016-Apr 2022	Hemanth Pidaparthy	PhD	EECS	Computer vision for hockey video curation	Chief Engineer, Samsung R&D

					James H. Elder Institute, India
Sept 2017-Oct 2020	Maryam Taheri-Shirazi	MASc	EECS	Assisted target detection in airborne search and rescue	
Sept 2015-Oct 2020	Yiming Qian	PhD	EECS	Single-view 3D shape from contour **(Nominated for thesis award)**	Scientist/Innovation Lead, A*STAR
Sept 2014-Aug 2016	Nada el Assal	MSc	CSE	Unsupervised methods for camera pose estimation and people counting in crowded scenes **(Nominated for thesis award)**	Software Engineer, Google, USA
Sept 2011-Oct 2014	Alex Yakubovich	MA	Math	Extensions of the formlet model of planar shape **(Nominated for thesis award**)	Quantitative Analyst, Google, USA
Sept 2008-Mar 2018	Eduardo Corral Soto	Ph.D.	CSE	Single-View 3D traffic analytics	Senior Research Scientist, Huawei Technologies
Sept 2008-Jul 2011	Charles Mander	MA	Psych	Differential modulation of parallel and serial search by exogenous and endogenous attention	
Sept 2008-Nov 2010	Tim Oleskiw	MSc	CSE	Multiscale representations for object boundary shape **(Nominated for thesis award**)	Postdoctoral Fellow, NYU, USA
Sept 2008-Apr 2011	Ron Tal	M.A.Sc.	CSE	Line-based single-view methods for estimating 3D camera orientation	Senior Machine Learning Platform Engineer, Coinbase, USA
Sept 2006-Apr 2015	Vida Movahedi	PhD	CSE	Computational methods and measures for contour grouping **(Nominated for thesis award**)	Professor, Seneca College, Toronto
Sept 2005-Jul 2008	Patrick Denis	MSc	CSE	Efficient edge-based methods for estimating Manhattan frames in urban imagery **(Winner of the 2008 York Faculty of Graduate Studies Thesis Award)**	Computer Vision Scientist, TamGam Systems, Waterloo
Sept 2002-Aug 2004	Aaron Clarke	MA	Psych	Ecological statistics of natural image contours (**Nominated for thesis award**)	
Sept 2002-Aug 2004	Yaniv Morgenstern	MA	Psych	Effects of noise on visual detection mechanisms	Postdoctoral Fellow, University Giessen,

Sept 2000-Apr 2003	Joseph Amati	MA	Psych	The perception of 3D transparent textured surfaces	Senior Manager, Loblaw
Sept 1998-Apr 2008	Lily Velisavljevic	PhD	Psych	Scene perception in a glance	Res. Assoc., University of Toronto
Sept 1998-May 2001	Adam Sachs	MSc	Math	Estimating the psychophysical receptive fields of edge detection mechanisms (**Nominated for thesis award**)	Asst. Professor, Brain and Mind Research Institute, University of Ottawa
May 1997-Feb 2002	Richard Goldberg	MSc	CSE	Image editing in the contour domain (**Nominated for thesis award**)	Human Factors Specialist, IBM

Graduate Student Projects

2015-2016	Cyan Kuo	EECS 6400.6	Biologically-inspired algorithms for smooth pursuit	M.A.Sc. student, York University
2001-2002	Kathleen Smith	PSYC 6710.3	The design of psychophysical experiments using MATLAB	Postdoctoral Fellow, University of Sussex Falmer, UK
2001-2002	Marie Arsalidou	PSYC 6710.3	The design of psychophysical experiments using MATLAB	Asst. Professor, National Research University Higher School of Economics, Russia

International Visiting Graduate Students

Jul-Aug 2019	Yongming Fan	Computer vision methods for traffic analytics at intersections	University of Indiana	Master's Student
Feb-Aug 2019	Matt Anderson	Spatial and semantic classification of natural scenes	Southampton University	Doctoral Candidate
Mar-Apr 2019	Frederik Hagelskjaer	Pose estimation	University of Southern Denmark	Doctoral Candidate
Apr-Aug 2018	Yue Wang	Domain adaptation for	Dalian University of Science & Technology	Doctoral Candidate

		semantic segmentation		
Jun-Aug 2011	Qi-Zhi Xu	Multi-scale methods for segmentation and grouping	Beihang University, Beijing, China	Postdoctoral Fellow, University of New Brunswick
Jul 2009-Jul 2010	Taeyoon Lee	Three-dimensionalizing surveillance networks	Inha University, Seoul, South Korea	Senior Researcher, Korea Aerospace Research Institute

Postdoctoral Fellows

			Current Position
Sept 2020-Jun 2021	Nicholas Baker	Deep neural network selectivity for global shape	Assistant Professor, Loyal University, Chicago
Nov 2019-Feb 2022	Azadeh Mozafari	Addressing the open-set problem in domain-adaptive re-ID systems	VISTA Postdoctoral Fellow, York University
Nov 2018-	Shaiyan Keshvari	Configural shape processing in humans and deep networks	Postdoctoral Fellow, York University
Mar 2018-Dec 2019	Kedarnath Vilankar	Single-view distance estimation in humans and deep networks	Data Scientist, Loblaw Companies
Feb 2018-Mar 2019	Yuke Li		Research Scientist, AutoNavi, Alibaba Group, Beijing, China
Aug 2017-Feb 2021	Pio Claudio	Urban mobility understanding platform	2D/3D Visualization, Software Engineer/Developer, ESG Solutions
Sept 2016-Jun 2019	Krista Ehinger		Senior Lecturer, School of Computing and Information Systems, University of Melbourne, Australia
Oct 2017-Aug 2018	Michaël Clément	Sparse shape coding	Associate Professor, Institut Polytechnique de Bordeaux, France
Jun 2016-Dec 2017	Khalid Yousif	Vehicle tracking for highway traffic analytics	Software Engineer, Faraday Future, USA
Dec 2014-Dec 2015	Emilio Almazan		Computer Vision Scientist, Nielsen, Madrid, Spain

Sept 2012-Aug 2015	Ingo Fründ	Senior Machine Learning Engineer, Verbally GmbH
Nov 2011-Apr 2013	Jan Drewes	Professor, Institute for Brain and Psychological Sciences, Sichuan Normal University, China
Jan 2005-May 2007	Francisco Estrada	Lecturer, Dept. of Computer and Mathematical Sciences, University of Toronto at Scarborough
Feb 2004-Aug 2005	Simon Prince	Research Scientist, Anthropics Technology Ltd, UK
Apr 2002-Oct 2004	Leigh Johnston	Senior Lecturer, Dept of Biomedical Engineering, University of Melbourne, Australia
Jan 2001-Apr 2002	Fadi Dornaika	Charge de Recherche, Institut Geographique National, Paris, France
Aug 1999-Jul 2001	Rob Reeves	
May 1999-Mar 2000	Manickam Umasuthan	Systems Engineer, MDA Space Missions, Toronto
Aug 1999-Aug 2000	Yuquian (Bob) Hou	Senior Research Scientist, Centre for Vision Research, York University

Visiting Sabbaticants

Jul 2009-Jul 2010	Taejung Kim	Geomatics Engineering	Inha University, Seoul, South Korea
Jul 2008-Jul 2009	Wendy Adams	Psychology	University of Southampton, UK
Jul 2008-Jul 2009	Erich Graf	Psychology	University of Southampton, UK
Jul 1999 – Jun 2000	Amnon Krupnik	Geomatics Engineering	Technion, Israel

Research Scientists & Engineers

			Current Position
May 2022-	Helio Perroni Filho	Social robots	Senior Robotics Engineer, York University
Feb 2021-Sept 2021	Yufei Xia	Computer vision for traffic analytics	Software Developer, Microsoft
Apr 2019-May 2021	Poornapagna Srinivasa Rao	Computer vision for traffic analytics	Senior Software Engineer, General Motors
Jul 2017-Aug 2018	Attila Gall	Highway traffic analytics	
Jul 2017-	Kartikeya Bhargava	Embedded AI systems	Software Engineer, York University
2014	Nada el-Assal	Attentive camera systems	Software Engineer, Google, USA
Jun 2008-Mar 2009	Toufiq Paraq	Computer vision software	Bioinformatics Specialist, Janelia Farm Research, VA, USA
Sept 2000-	Yuqian (Bob) Hou	Laboratory Scientist	Senior Research Scientist, York University
Nov 2000-Jun 2003	Ronen Goldstein	Attentive Camera Systems	RBC Capital Markets
May 1999-July 2000	Gregory Wu	Systems Administrator	Technical Staff, Physics Computing Services, University of Toronto

Program & Project Managers

		Current Position
Jan 2020-	Anna Kajor	Project Manager
May 2016-Mar 2021	Irina Kapsh	Project Manager, Upskilling Program, University of Toronto
Jul 2017-Aug 2019	Khaing Khaing Lin	Manager, Project Planning & Implementation, York University

Supervisory and Internal Examining Committees

2023	Andrew Heyman	M.Sc.	Psychology	Examining Committee
2022-	Rachel Moreau	M.A.	Psychology	Examining Committee
2022-	Nima Bathaie	M.Sc.	Electrical Engineering & Computer Science	Supervisory Committee
2022-	Alexandra Scott	Ph.D.	Osgoode	Supervisory Committee

			Hall Law School	
2021	Alanna Pierias	Ph.D.	Kinesiology & Health Science	Examining Committee
2021	Tasfia Ahsan	M.A.	Psychology	Examining Committee
2020-2021	Hongyi Guo	M.Sc.	Electrical Engineering & Computer Science	Supervisory Committee
2020-2021	Jasmeet Kaur	M.Sc.	Electrical Engineering & Computer Science	Supervisory Committee
2019-	Ryan Clark	Ph.D.	Earth & Space Science & Engineering	Supervisory Committee
2019-	Siddharth Dave	Ph.D.	Earth & Space Science & Engineering	Supervisory Committee
2019-	Enas AlTarawneh	Ph.D.	Electrical Engineering & Computer Science	Supervisory Committee
2019-2021	Delaram Farzanfar	M.A.	Psychology	Supervisory Committee
2019	Aviv Gaon	Ph.D.	Osgoode Hall Law School	Examining Committee
2018-	Yuping Lin	Ph.D.	Electrical Engineering & Computer Science	Supervisory Committee
2017-2018	Sanjida Sharmin Mohona	M.A.Sc.	Electrical Engineering & Computer Science	Supervisory Committee
2017	Ronda Lo	M.A.	Psychology	Examining Committee
2015	Junjie Zhang	Ph.D.	Earth and Space Science & Engineering	Examining Committee
2014-2015	Glen Berseth	M.Sc.	Computer Science & Engineering	Examining Committee
2014-2017	Hengyue Pan	Ph.D.	Computer Science & Engineering	Supervisory Committee

2013-2015	Matthew Balcarras	M.Sc.	Biology	Supervisory Committee
2013	Michael Veksler	M.Sc.	Biology	Examining Committee
2012	Martin Dimkovski	M.Sc.	Computer Science & Engineering	Examining Committee
2012	Yao Zhang	M.Sc.	Computer Science & Engineering	Supervisory Committee
2012-2014	Ravi Persad	M.Sc.	Earth, Space Science & Engineering	Examining Committee
2011-2012	Adrian Bartlett	M.A.	Psychology	Examining Committee
2011-2012	Wei Gao	Ph.D.	Computer Science	Examining Committee
2011-2013	Larry Wang	Ph.D.	Earth, Space Science & Engineering	Research Evaluation Committee
2011-2015	Chao Luo	Ph.D.	Earth, Space Science & Engineering	Research Evaluation Committee
2009-2013	Inna Tsirlin	Ph.D.	Psychology	Supervisory Committee
2009-2012	Yaniv Morgenstern	Ph.D.	Psychology	Supervisory Committee
2009	Kevin MacKenzie	Ph.D.	Psychology	Supervisory Committee
2009	Muna Shabaneh	M.Sc.	Computer Science	Examining Committee
2008	Nicole Daniels	M.Sc.	Biology	Outside Examiner
2007	Steve Liang	Ph.D.	Earth and Atmospheric Sciences	Supervisory Committee
2006	Olena Borzenko	M.Sc.	Computer Science	Outside Examiner
2006	Gerald Keith	Ph.D.	Psychology	Supervisory Committee
2006	Hoda Dehmeshki	Ph.D.	Computer Science	Supervisory Committee
2006	Helen Karpouzos	M.A.	Psychology	Supervisory Committee
2005	Peter Carr	M.Sc.	Computer Science	Outside Examiner
2005	Wei Xu	M.Sc.	Computer Science	Outside Examiner
2005	Andrejs Vorozcovs	M.Sc.	Computer Science	Outside Examiner
2005	Ji-Young Oh	PhD	Computer Science	Outside Examiner
2004	Gerald Keith	M.A.	Psychology	Supervisory Committee
2003	Michael Vesia	M.Sc.	Kinesiology	Outside Examiner
2002	Steve Prime	M.A.	Psychology	Supervisory Committee
2002	Slava Konovalova	M.Sc.	Biology	Supervisory Committee
2001	Patrick Zhao	M.Sc.	Computer	Outside Examiner

2001	Marie Bomba	M.Sc.	Science Kinesiology & Health Science	Outside Examiner
2001	Ho-Kong Ng	M.Sc.	Computer Science	Outside Examiner
2000	Paul Doerfling	M. A.	Kinesiology & Health Science	Dean's Representative
2000	Michael Smith	Ph.D.	Psychology	Supervisory Committee
1999	Gang Hu	M.Sc.	Biology	Outside Examiner
1999	Melike Ceylon	M.A.	Psychology	Supervisory Committee
1998	Anthony Singhal	M.A.	Kinesiology & Health Science	Outside Examiner
1998	King-Yuen Wong	M.Sc.	Computer Science	Dean's Representative
1998	Eliana Klier	M.Sc.	Biology	Outside Examiner
1997	Benjamin Wong	M.Sc.	Computer Science	Outside Examiner
1997	Michael Smith	M.A.	Psychology	Supervisory Committee
1997	Ann Lindeis	Ph.D.	Psychology	Supervisory Committee

External Examinations

2021	Morin Duchesne, X. *Distance perception and natural scene statistics: What can we learn from object-ground segregation and simulated LiDAR repositioning,* Master's thesis, McGill University.
2020	Qin, X. *Visual Salient Object Detection: Interactive, Unsupervised and Supervised methods,* PhD thesis, University of Alberta.
2020	Chung, A. *Highly Efficient Deep Intelligence via Multi-Parent Evolutionary Synthesis of Deep Neural Networks,* PhD thesis, University of Waterloo.
2018	Sochor, J. *Automatic Traffic Video Surveillance: Fine-Grained Recognition of Vehicles and Automatic Speed Measurement,* PhD thesis, Brno University of Technology, Czech Republic.
2013	Nakaguro, Y. *Application of Quadratic Snakes to Segmentation of Complex Shaped Objects*, PhD thesis, Sirindhorn International Institute of Technology, Thailand.
2011	Liu, Y. *A Problem in Graphics and Vision via Graph-Cut based Energy Optimization*, PhD thesis, Department of Computer Science, University of Western Ontario
2011	Taylor, C. *On the Summation of Visual Noise*, PhD thesis, Department of Psychology, Neuroscience & Behaviour, McMaster University
2010	Levinshtein, A. *Low and Mid-Level Shape Priors for Image Segmentation,* PhD thesis, Department of Computer Science, University of Toronto

2009	Hussain, Z. *Perceptual Learning of Complex Patterns*, PhD thesis, Department of Psychology, Neuroscience & Behaviour, McMaster University
2008	McCloskey S.P., *Investigating Blur in the Framework of Reverse Projection*, PhD thesis, Department of Computer Science, McGill University
2007	Law A., *Experiments in Object Tracking in Image Sequences*, Master's thesis, Department of Electrical and Computer Engineering, McGill University

Other Teaching-Related Activities

1998	York University Release-Time Teaching Fellowship and Development Grant, for *Integrated disciplinary and computer training in an active learning environment*

SERVICE

Administrative Positions

2022-	Co-Director, Centre for AI & Society (CAIS)
2017-2022	Seminar Coordinator, Centre for Vision Research
2001-2006	Coordinator, Brain, Behaviour and Cognitive Sciences, Graduate Program in Psychology

Committees

Departmental

2022-2023	Co-Chair, Computational Neuroscience Faculty Search Committee, Department of Psychology
2022-2023	Chair, Career Readiness Committee, Department of Electrical Engineering and Computer Science
2021-2022	Member, Graduate Executive Committee, Department of Electrical Engineering and Computer Science
2021-2022	Member, Graduate Admissions Committee, Department of Electrical Engineering and Computer Science
2021-2022	Member, Tenure and Promotion Adjudicating Committee, Department of Physics & Astronomy
2020-2021	Member, AI Faculty Search Committee, Department of Electrical Engineering and Computer Science
2020-2021	Member, Graduate Executive Committee, Department of Electrical Engineering and Computer Science
2019-2021	Member, Tenure and Promotion Committee, Department of Psychology
2018-2019	Member, Software Engineering Faculty Search Committee, Department of Electrical Engineering and Computer Science
2017-2018	Member, Graduate Executive Committee, Department of Electrical Engineering and Computer Science
2016-2017	Chair, Computational Neuroscience Faculty Search Committee, Department of Psychology
2015-2016	Member, EECS PhD Proposal Committee, Department of Electrical Engineering and Computer Science
2015-2016	Member, Tenure & Promotion File Preparation Committee, Department of Electrical Engineering and Computer Science
2014-2016	Member, Tenure & Promotion Committee, Department of Electrical Engineering and Computer Science
2014-2016	Member, Graduate Executive Committee, Department of Electrical Engineering and Computer Science
2014-2015	Chair, Canada Research Chair Tier II in Digital Media Search Committee, Department of Electrical Engineering and Computer Science

2013-2015	Co-Chair, Graduate ECE Proposal, Department of Electrical Engineering and Computer Science
2012-2015	Member, Graduate Computer Engineering Committee, Department of Electrical Engineering and Computer Science
2013-2014	Chair, Tenure & Promotion File Preparation Committee, Department of Electrical Engineering and Computer Science
2010-2014	Member, Website Committee, Department of Computer Science and Engineering
2010-2014	Member, Digital Media Program Committee, Department of Computer Science and Engineering
2012-2013	Member, Software Engineering Faculty Search Committee, Department of Electrical Engineering and Computer Science
2010-2011	Member, Computer Graphics Faculty Search Committee, Department of Computer Science and Engineering
2008-2009	Chair, Graduate Computer Engineering Committee, Department of Computer Science and Engineering
2007-2008	Member, Tenure File Preparation Committee for Richard Murray, Department of Psychology
2006-2009	Member, Computer Engineering Program Committee, Department of Computer Science and Engineering
2006-2008	Member, Petitions Committee, Department of Computer Science and Engineering
2004-2005	Member, Tenure and Promotion Committee, Department of Psychology
2004-2005	Chair, Brain, Behaviour and Cognitive Sciences Search Committee, Department of Psychology
2003-2006	Member, Graduate Executive Committee, Department of Psychology
2003-2006	Member, Research Awards Committee, Department of Psychology
1999-2005	Member, Computing Committee, Department of Psychology
1998-2001	Member, Executive Committee, Department of Psychology
1999-2000	Member, Departmental Chair Search Committee, Department of Psychology
1999-2000	Member, Research Methods Faculty Search Committee, Department of Psychology
1998	Member, Clinical Neurobiology Faculty Search Committee, Department of Psychology
1998	Member, Sub-Committee on Psychology Reports, Department of Psychology

Research Centre

2023-	Chair, Connected Minds Facilities Committee
2023-	Member, Connected Minds Leadership Committee
2022-	Member, VISTA Sustainability Committee
2021-	Member, VISTA Partnership Committee

2020-2022	Member, VISTA Events Committee
2017-2022	Member, Steering Committee, Centre for Vision Research (Ex Officio)
2018-2021	Member, VISTA Leadership Committee
2018-2021	Chair, VISTA Partnership Committee
2017-2018	Member, VISTA Partnership Committee
2015-2016	Member, Writing Team, Canada First Research Excellence Fund Initiative
2014-2016	Member, Executive Committee, Centre for Information Visualization and Data-Driven Design
2011-2015	Member, Steering Committee, Centre for Vision Research (Elected)
2011-2013	Chair, Centre for Vision Research CREATE Programme Scientific Committee
2003-2006	Member, Steering Committee, Centre for Vision Research
1999-2000	Member, Kirshner Award Committee

Faculty

2021-2023	Member, Lassonde College of Internal Peer Review, Lassonde School of Engineering
2021-2022	Member, Primate Neurophysiology Faculty Search Committee, Department of Kinesiology & Health Science, Faculty of Health
2020-2022	Member, Graduate Learning, Curriculum and Students Committee , Lassonde School of Engineering
2019-2021	Member, Ad-hoc Tenure & Promotion Adjudication Committee, Lassonde School of Engineering
2017-2018	Dean's Representative, Chair Search Committee, Department of Earth and Space Science and Engineering, Lassonde School of Engineering
2011-2012	Chair, Lassonde School of Engineering Faculty Search Committee (two full professor leadership positions and one tenure-track position)
2007-2008	Member and Affirmative Action Representative, Geomatics Engineering Faculty Search Committee, Faculty of Science and Engineering
2005-2006	Member, Engineering Faculty Search Committee, Faculty of Science and Engineering
2000-2001	Member, Engineering Design Faculty Search Committee, Faculty of Pure and Applied Science
1999-2000	Member, Information Technology Council, Faculty of Arts
1997-1998	Member, Committee on Examinations and Academic Standards, Faculty of Pure and Applied Science

University

2021-2022	Member, NSERC CGSM Adjudication Committee

2021-2022	Co-Chair, York University Markham Campus Research Committee (AI & Society)
2018-2021	Co-Chair, York University Task Force on AI & Society
2015-2016	Member, Strategic Projects Opportunity Review Team
2013-2014	Member, Senate Executive Committee
2011-2014	Faculty of Health Senator (Elected)
2008-2009	OGS Ontario Graduate Scholarship Panel

Activities

Departmental

2022-2023	Mentor for new faculty member, Department of Electrical Engineering & Computer Science
2020-2021	Teaching referee for tenure & promotion, Department of Psychology
2020-2021	Teaching referee for tenure & promotion, Department of Electrical Engineering & Computer Science
2017-2018	Mentor for new faculty member, Department of Psychology
2013-2014	Rated NSERC CGS-M Applications, Department of Psychology
2013-2014	Adjudicated nominations for the Norman S. Endler Research Fellowship for the Brain, Behaviour and Cognitive Sciences area
2012-2013	Faculty mentor for new faculty member, Department of Computer Science & Engineering
2011-2012	Teaching evaluation for Amir Asif's application for promotion to Full Professor, Department of Computer Science & Engineering
2010-2011	Rated Ontario Graduate Scholarship applications (Master's), Department of Psychology
2008-2009	Teaching evaluation for faculty member promotion to Full Professor, Department of Computer Science & Engineering
2007-2008	Prepared nomination of undergraduate student for the Murray G. Ross Award, Department of Computer Science & Engineering
2007-2008	Rated Ontario Graduate Scholarships applications (Master's), Department of Psychology
2006-2007	Organized first Brain, Behaviour and Cognitive Sciences Program Recruiting Day, Department of Psychology
2006-2007	Candidacy file preparation coordinator, Department of Psychology
2004-2005	Faculty mentor for new faculty member, Department of Psychology
2003-2004	Developed advertising poster for Brain, Behaviour & Cognitive Sciences area of Psychology Department
2001-2002	Evaluated teaching for Department of Psychology Junior Tenure and Promotion Committee, Department of Psychology

1999-2000	Helped to draft portions of the Departmental Plan on technology-enhanced learning and new appointments, Department of Psychology
1999-2000	Prepared submission for Faculty of Pure and Applied Science Strategic Academic Initiatives Fund, Department of Psychology
1998-1999	Rated undergraduate student applications for Ontario Graduate Scholarships, Department of Psychology
1997-2000	Advised York B.Sc. students majoring in Psychology, Department of Psychology
1997	Rated graduate student applications for Ontario Graduate Scholarships, Department of Psychology

Research Centre

2022	Co-founded, with P. D'Agostino, a new York University Organized Research Unit: Centre for AI & Society (CAIS)
2014-2015	Organized and chaired 3rd Bootcamp for the York CREATE Training Program in Vision Science and Applications.
2013-2014	Organized and chaired 2nd York University CVR Research Retreat
2013-2014	Organized field trip to Ottawa for York CREATE Training Program in Vision Science and Applications.
2012-2013	Organized and chaired 1st Bootcamp for the York CREATE Training Program in Vision Science and Applications.
2012-2013	Organized and chaired 1st York University CVR Research Retreat
2010-2014	Manager of Centre for Vision Research Website
2007-2014	Lecturer, Centre for Vision Research Vision Science Summer School
2007-2008	Led the design and development of a new brochure and website for the Centre for Vision Research
1998	Designed and distributed Centre for Vision Research poster

Faculty

2023	Invited speaker for *Protecting & Mobilizing your IP*, Lassonde School of Engineering
2019-2020	Keynote talk, *University-Industry Collaborations in Intelligent Systems Research*, Lassonde Research Day
2019-2020	Member, Mock Site Visit Committee, NSERC CRD Application
2018-2019	Panelist for York University NSERC I2I Information Session
2018-2019	Internal Reviewer, NSERC Discovery Grant competition, Faculty of Health
2017-2018	Panelist for NSERC I2I York Proposal Development Workshop, Lassonde School of Engineering
2017-2018	Teaching evaluation for faculty application for promotion to Full Professor, Lassonde School of Engineering
2014-2015	Discovery Grant Faculty Mentor, Lassonde School of Engineering
2014-2015	CFI Grant Faculty Mentor, Lassonde School of Engineering

2009-2010	Drafted Proposal for new Organized Research Unit: FIRE (Focus on Innovation in Research and Innovation) (With R. Hornsey.), Faculty of Pure & Applied Science
2006-2007	Participated in CEAB Review of York Engineering Programme, Faculty of Pure & Applied Science
2006-2007	Helped review and revamp General Education Requirements for York Engineering Program, Faculty of Science
1999-2000	Coordinated between Psychology and Mathematics Departments and drafted proposal for new joint faculty position in Neural Computation, Faculty of Arts
1997-2000	Participated in calling campaign to attract top high-school students to York University, Faculty of Arts

University

2020-2021	Internal Reviewer, CIHR HRTP proposal
2019-2020	Guest presenter, Research Commons. *The Next Level NSERC Grants – Setting the Foundation and Writing a CREATE Grant*
2019-2020	Received delegation from University of Essex
2017-2018	Chair, York University Symposium on Coding Caring: Creating AI that Makes Dollars and Sense
2017-2018	Panelist for ORF-RE York Proposal Development Session

OUTREACH

2020-2021	Served as mentor for project completed by two Toronto high school students (Sarvnaz Alemohammad and Jin Schofield) that won the **Gold Medal at the York Region Science and Technology Fair**.
2022-2023	Served as mentor for Hypixel Sykblock robotics team led by junior high school student Aaron Hui.

COMMUNITY SERVICE

2006-09	Member, Board of Directors, Howard Park Children's Centre
2008-09	Coach, West-End United Soccer Club

Last updated: Sept 2023