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

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| **Address** | Centre for Vision Research<br>York University<br>4700 Keele Street<br>North York, Ontario<br>Canada M3J 1P3 | **Tel** | Office (416) 736-2100 ext.66475<br>Home (416) 588-5346<br>Fax (416) 736-5857 |
| **Year of Birth** | 1964 | **Email** | jelder@yorku.ca |
| **Citizenship** | Canadian | **WWW** | www.yorku.ca/jelder<br>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 $14M in direct external research funding to support this research program. I am also founding Director of the York University Centre for AI & Society (CAIS), and a Faculty Affiliate with the Vector Institute for AI.

I have trained more than 145 graduate and undergraduate research students and postdoctoral fellows, and with them and other colleagues have published more than 100 papers in high-impact international journals, conferences and books, generating more than 9,300 citations. Eleven 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 helicopter navigation, traffic analytics, sports videography and airport mobility systems. Our public datasets have become standard global benchmarks for vision tasks (www.elderlab.yorku.ca/resources). We have been awarded three patents and have three additional patent applications on attentive sensing and robot systems.

## EDUCATION

*Ph. D. 1996*

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

*M. Eng. 1992*

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

*B. A. Sc. 1987*

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| *Institution* | University of British Columbia, Department of Electrical Engineering |

## HONOURS & AWARDS

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|---|---|
| *2023-2028* | York Research Chair (Tier I) in Human and Computer Vision, York University |
| *2021-present* | Stanford University Top 2% Researcher List |
| *2022* | Lassonde Innovation Award – Established Researcher |
| *2022* | Asian Conference on Computer Vision – Outstanding Reviewer Award |
| *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* |

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| *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

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|---|---|---|
| *2018-* | Professor & York Research Chair in Human and Computer Vision, | Department of Electrical Engineering & Computer Science<br>Department of Psychology, York University |
| *2012-2018* | Professor, | Department of Electrical Engineering & Computer Science<br>Department of Psychology, York University |
| *2006-2012* | Associate Professor, | Department of Computer Science & Engineering and<br>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

Faculty Member, Connected Minds, 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 (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)**

*2024-2026* Principal Investigator, Ministry of Transportation Ontario Highway Infrastructure Innovation Funding Program, *A real-time-self-contained video-based AI system for highway traffic analysis* **($138,335 over two years)**

*2023-2025* Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Alliance grant, The AirChair: Safe and efficient wheelchair convoys for airports **($110,730 over two 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)**

*2019-2024* Principal Investigator, University of Toronto Subcontract, *Detecting, Classifying and Tracking Vulnerable Road Users at Intersections with Deep Learning* **($444,771 over five 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 (AWARDED)**

*2025-2028* Co-Principal Investigator, Connected Minds Team Grant , CINTHeA: *Co-creating Intelligent Neuro-Technologies for Healthy Aging* **($1,500,000)**

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

*2025-2026* Principal Investigator, VISTA Prototyping Grant, *UMAP: Universal Mobility Analytics Platform* **($68,120)**

*2025-2026* Principal Investigator, Connected Minds Phase 1 Prototyping Grant, *PSIBOT: A novel attentive head for panoramic socially-intelligent robotics* **($20,000)**

*2025-2026* Principal Investigator, VISTA Prototyping Grant, *The AirChair: An AI-powered Wheelchair for Semi-Autonomous Mobility Assistance* **($45,018**, over one year)

*2025* Principal Investigator, SmartTO Applied Technical Project, *Drone-based mobility survey of York Keele campus* **($15,000**, over three months)

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

*2021-2025* Co- Principal Investigator, Catalyzing Interdisciplinary Research Clusters Grant, *AI Systems: Engineering, Governance & Society* **($525,000**, over three years)

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

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

*2023* Co-Investigator, VISTA Prototyping Grant, *Intelligent interactive avatar* **($20,000**, already accounted for in external grant listed above)

*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

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|---|---|
| Number of citations (Google Scholar): | 9,856 |
| H-Index (Google Scholar): | 33 |
| Peer-Reviewed Journal Articles: | 39 |
| Peer-Reviewed Full Conference Papers: | 57 |
| Special Issue Editorials: | 4 |
| Book Chapters: | 4 |
| Patents: | 5 (3 awarded, 2 pending) |

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 (2022)**

| Impact Factor | Journal |
|---|---|
| 23.6 | IEEE Transactions on Pattern Analysis and Machine Intelligence |
| 22.4 | Psychological Bulletin |
| 19.5 | International Journal of Computer Vision |
| 9.2 | Current Biology |
| 8.0 | Pattern Recognition |
| 6.9 | Computational Visual Media |
| 6.0 | Annual Review of Vision Science |
| 5.8 | iScience |
| 5.3 | Journal of Neuroscience |
| 5.1 | ACM Transactions on Multimedia Computing, Communications and Applications |
| 4.6 | Scientific Reports |
| 4.3 | PLOS Computational Biology |
| 4.7 | Image and Vision Computing |
| 3.3 | Journal of Intelligent and Robotic Systems |
| 1.8 | Journal of Vision |
| 1.8 | Vision Research |
| 1.7 | Perception |

**Computer Vision Conference Impact**

| Publication | Publication Type | h5-index (Google Scholar) |
|---|---|---|
| CVPR | Conference | 422 |
| ECCV | Conference | 390 |
| ICCV | Conference | 366 |
| CVPR Workshops | Conference | 176 |
| WACV | Conference | 150 |
| BMVC | Conference | 77 |
| ICIP | Conference | 61 |
| ACCV | Conference | 60 |

**List of Publications**

**Refereed Journal Articles**

1. Wang, Y., Li, Y., Elder, J.H., Wu, R., Lu, H. (2024). Class-conditional domain adaptation for semantic segmentation. *Computational Visual Media* https://doi.org/10.1007/s41095-023-0362-4. (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). Ice hockey spectators use contextual cues to guide 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. Koshkina, M. & Elder, J.H. (2025). Towards long-term player tracking with graph hierarchies and domain-specific features. In *3rd Workshop on Computer Vision for Winter Sports (CV4WS), Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision Workshops (WACVW).*

2. Pakdamansavoji, S., Vaibhav Jha, K., Abdulhai, B. & Elder, J.H. (2024). 3D multi-camera turning movement counts at intersections. In IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2024). **Best Application Paper Award**.

3. Perroni Filho, H., Ren, J., Akhavan, M., Hou, YU., Khan, W., Haghparast, A., Forsyth, J., Rajaeifar, K., Jenkin, M. & Elder, J.H. (2024). Robot wheelchair convoys for assistive human transportation. In *IEEE International Conference on Smart Mobility (IEEESM)*.

4. Koshkina, M. & Elder, J.H. (2024). A general framework for jersey number recognition in sports video. In *10th International Workshop on Computer Vision in Sports (CVsports), Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops.*

5. Spencer, J. *et al.* (2024). The third monocular depth estimation challenge. In *IEEE/CVF Computer Vision and Pattern Recognition Workshops (CVPRW)* 3603-3075.

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

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

8. 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.

9. 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.

10. 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.

11. 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%.

12. 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%.

13. 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%.

14. 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.**

15. 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%.

16. 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.*

17. 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**.

18. 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%.

19. 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%.

20. 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.

21. 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.

22. 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.

23. 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%.

24. 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%.

25. 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.

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

27. 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.

28. 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%.

29. 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%.

30. 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%.

31. 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.

32. 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%.

33. 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.

34. 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.

35. 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.

36. 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.

37. 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%.

38. 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%.

39. 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%.

40. 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%.

41. 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%).

42. 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%.

43. 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.

44. 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%.

45. 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%.

46. 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.

47. 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.

48. 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.

49. 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%.

50. 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%.

51. 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%.

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

53. 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%.

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

55. 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.

56. 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.

57. 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.

**Special Issue Editorials**

1. Elder, J.H., Peterson, M. & Bernhardt-Walter, D. (2024) Editorial: Perceptual Organization in Computer and Biological Vision. *Frontiers in Computer Science*, Vol. 6.

2. 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.

3. 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.

4. 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., Filho, H.P., Vishnu, A., Barrios Sierra, J.M., Verma, R. (2024). Collaborative smart wheelchairs for assistive human transportation. (US Patent Application 63/642,362). Filed May 3, 2024.

2. Elder, J.H., Filho, H.P., Trajcevski, A., Bhargava, K., Javed, N., Akhavan, M. (2024). *System, method and device for capturing high resolution images over a panoramic scene in near and far fields for imaging of persons* (US Patent Application 18/403,306). Filed Jan 3, 2024.

3. 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.

4. 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.

5. 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.** Trescakova, M., Adams, W.J., Anderson, M.D., Elder, J.H. & Graf, E.W. (2025). Depth estimation in real-world scenes. *Vision Sciences Society Conference*.

**2.** Samet, S., Kahlon, J., Baker, N., Freud, E. & Elder, J.H. & Kohler, P.J. (2025). The contribution of configural shape to object recognition is processed by a late-onset mechanism likely localized in right temporal cortex. *Vision Sciences Society Conference*.

3. Kohler, P.J., Samet, S., Baker, N., Freud, E. & Elder, J.H. (2024). Investigating local and configural shape processing with SSVEPs. *European Conference on Visual Perception*.

4. Baker, N., Wilder, J. & Elder, J.H. (2024). Differential sensitivity of humans and deep networks to the amplitude and phase of shape features. *Vision Sciences Society Conference*.

5. Samet, S., Elder, J.H., Baker, N., Freud, E., Kohler, P.J. (2024). Investigating local and configural shape processing with steady-state visual evoked potentials. *Vision Sciences Society Conference*.

6. Oleskiw, T.D., Elder, J.H., 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*.

7. 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*.

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

9. 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*.

10. 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.

11. 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%

12. 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.*

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

14. 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.*

15. 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.*

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

17. 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.*

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

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

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

21. 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.*

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

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

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

25. 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*.

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

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

28. 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*.

29. 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*.

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

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

32. 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*.

33. 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.

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

35. 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*.

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

37. 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*.

38. 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*.

39. 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*.

40. 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*.

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

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

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

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

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

46. 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).**

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

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

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

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

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

52. 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.

53. 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.

54. 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.

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

56. 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.

57. 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.

58. 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.

59. 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.

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

61. 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.

62. 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.

63. 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.

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

65. 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.

66. 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.

67. 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.

68. 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.

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

70. 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.

71. 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.

72. 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.

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

74. 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.

75. 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.

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

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

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

79. 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.

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

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

82. 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.

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

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

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

86. 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. (2025) Shape Perception in Humans and Machines, *MODVIS 2025: Computational and Mathematical Models in Vision.*

Elder, J.H. (2025) Computer Vision for Humans, *Cross Future AI Summit, Toronto.*

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. (2025) AI research at York University, *Cross Future AI Summit, Toronto.*

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. (2025). Fourier analysis of shape perception in humans and machines. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

Elder, J.H. (2024). Scaling perceptual curvature. *Annual Interdisciplinary Conference*, Jackson Hole, WY.

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. (2024) AI & Society, *Government of Canada Deputy Minister Seminar, Ottawa, ON.*

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 (2nd 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***

| | |
|---|---|
| Sept 3 2024 | Ethics, Ideals and Integration, *York University Magazine.* |
| 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. |

***Y-File Articles***

| | |
|---|---|
| Jul 16, 2025 | Research in Focus: advancing AI for a better tomorrow |
| Jul 11, 2025 | Connected Minds awards $7.5M in grants to advance technology |
| Mar 8, 2024 | York University's Centre for AI & Society is pioneering research for a connected future |
| Feb 27, 2024 | Centre for AI & Society announces inaugural advisory board |
| Oct 26, 2023 | York's world-leading vision research program looks towards the future |
| 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 2022, with Prof. D'Agostino and I serving as Co-Directors.

### Collaborative Research Projects

I have spearheaded numerous multi-sector, interdisciplinary collaborative projects. From 2017-2023 I led the $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, Solaris Robots) 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 am also a Co-Applicant on York's second successful CFREF project, Connected Minds: Neural & Machine Systems for a Healthy, Just Society ($105M, 2023 – 2030). I now serve as a member of the Connected Minds Leadership Committee and as Chair of its Facilities & Infrastructure Committee.

**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***

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| *2025* | Guest Editor, *Vision Research*, Special Issue on Mathematical and Computational Models in Vision |
| *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 |

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| *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 & Workshop Organization***

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|---|---|
| *2025* | Co-Chair, Connected Minds Conference, Toronto |
| *2024* | Co-Organizer, Connected Minds Co-Creation Workshop: Intelligent Technologies for Healthy Aging: Robotics and Neurotech for Monitoring, Support and Community |
| *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), 5$^{th}$ 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 |

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| *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***

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|---|---|
| *2025-26* | Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Denver, CO |
| *2025* | Member, Review Committee, International Conference on Computer Vision (ICCV), Honolulu, HI |
| *2025* | Member, Program Committee, Computer and Robot Vision Conference (CRV), Calgary, AB |
| *2024-25* | Member, Review Committee, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR), Nashville, TN |
| *2024* | Member, Review Committee, Winter Conference on Applications in Computer Vision (WACV), Tucson, AZ |
| *2024* | Member, Program Committee, Computer and Robot Vision Conference (CRV), Guelph, ON |
| *2024* | Member, Review Committee, European Conference on Computer Vision (ECCV), Milan. |
| *2021-24* | Review Committee, Vision Sciences Society |
| *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 |

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|---|---|
| *2022* | Member, Review Committee, Winter Conference on Applications in Computer Vision (WACV), Waikoloa, HI |
| *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 |

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|---|---|
| *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 |

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|---|---|
| *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 |

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|---|---|
| *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***

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| *2025* | Translating Vision Research into Real-World Applications. *Canadian Vision Research Trainee Networking Retreat: Navigating Careers in Vision Research,* Toronto. |
| *2025* | Enhancing AI Reasoning and Embodied Intelligence. *Cross Future Hub AI Summit, Vancouver*. |
| *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. |
| *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***

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|---|---|
| *2024* | Courtois – V Chair in Neuroscience, University of Montreal |
| *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 |

***Advisory Boards and 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 Accelerate 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*

| | | |
|---|---|---|
| *2024-2025* | EECS 4422 | Computer Vision |
| *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 Engineering Capstone Projects*

| Dates | Name | Project Title |
|---|---|---|
| *2025-2026* | Senthuran Ponsamy, Sasha Brucker, Abbey McMiollan, William Moran, Diego. Alonso, Daniel Ferlisi | *Training Reinforcement Learning Agents for Wheelchair Navigation in Simulated Environments Using AMD Schola and Unreal Engine* |
| *2016-2017* | Juan Loja, Amanpreet Wallia, Tangeena Islam | *Embedded Eye* |

***Undergraduate Honours Theses, Independent Readings and Senior Projects***

| Dates | Name | Thesis / Project Title | Current Position |
|---|---|---|---|
| *2023* | Deepta Adhikary | *MCMC method for generating naturalistic shapes* | |
| *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* |

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|---|---|---|---|
| *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***

| | | | |
|---|---|---|---|
| *2025* | Thi Thuy Nguyen | *Symmetry-based monocular 3D vehicle ground truthing for traffic analytics* | *Undergraduate student, York University* |
| *2024* | Prachurya (Deepta) Adhikary | *Generative shape modeling: Diversity and scale* | *Undergraduate student, York University* |
| *2024* | Aijaisarma Sabaratnasarma | *Computer vision systems for highway traffic analytics* | *Undergraduate student, York University* |
| *2024* | Mohammad Hosseini | *Video-based traffic analytics at intersections* | *Undergraduate student, York University* |
| *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* |

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|---|---|---|---|
| *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* | |

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|---|---|---|---|
| *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***

| | | | |
|---|---|---|---|
| *2025* | Vansh Bhasin | *AI for drone-based traffic analytics* | *Undergraduate student, York University* |
| *2024* | Thi Thuy Nguyen | *Symmetry-based monocular 3D vehicle ground truthing for traffic analytics* | *Undergraduate student, York University* |
| *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* |

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|---|---|---|---|
| *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***

| | | |
|---|---|---|
| *2023* | Jenny Ren | *Integrating kinematics and appearance for reliable wheelchair* |
| *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* |

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|---|---|---|
| *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***

| | | |
|---|---|---|
| *2025-2026* | EECS 5323 | Computer Vision |
| *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 2025-* | Alirezi Ghademi | MEng | EECS | Vision language models for social robots | |
| *Sept 2023-* | Kumar Vaibhav Jha | MSc | EECS | Long-term non-causal tracking | |
| *Sept 2022-* | Bardia Esmaeili | PhD | EECS | 3D reconstruction at intersections | |
| *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-Apr 2025* | Sajjad Savoji | MSc | EECS | 3D traffic analytics at intersections | Senior AI Researcher, Huawei Canada |
| *Sept 2021-Sept 2024* | Thao Tran | MSc | EECS | Recovering 3D vehicle shape from symmetry | Solutions Architect / Product Manager, FPT Software |
| *Sept 2020-Aug 2024* | Tenzin Chosang | MA | Psych | Perceptual contour completion | Instructional Support Assistant, University of Toronto |
| *Sept 2020-* | Nizwa Javed | PhD | EECS | Attentive sensing for social machine intelligence | |
| *Sept 2018-Sept 2025* | Mariya Koshkina | PhD | EECS | Unsupervised learning for sports videography | |
| *Sept 2016-* | Gong Cheng | PhD | EECS | Adaptive road segmentation | Machine Learning |

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|---|---|---|---|---|---|
| | | | | | Engineer, Torc Robotics |
| *Sept 2020-Apr 2023* | Tasneem Naheyan | MASc | EECS | Using linear perspective to extend the range of depth cameras for mobile robot applications | Engineering Associate, ITS, Parsons Corp. |
| *Sept 2019-Mar 2023* | Keyi Liu | MASc | EECS | Sparse shape coding for improved instance segmentation | Engineer, Huawei Technologies Canada |
| *Sept 2016-Apr 2022* | Hemanth Pidaparthy | PhD | EECS | Computer vision for hockey video curation | Chief Engineer, Samsung R&D 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)** | Assistant Professor, University of Regina |
| *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 |

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|---|---|---|---|---|---|
| *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 | Assistant Professor, Erasmus University, Netherlands |
| *Sept 2000-Apr 2003* | Joseph Amati | MA | Psych | The perception of 3D transparent textured surfaces | Senior Executive Director, Global Market and Brand Intelligence, Destination Canada |
| *Sept 1998-Apr 2008* | Lily Velisavljevic | PhD | Psych | Scene perception in a glance | |
| *Sept 1998-May 2001* | Adam Sachs | MSc | Math | Estimating the psychophysical receptive fields of edge detection mechanisms (**Nominated for thesis award**) | Director of Neuromodulation and Functional Neurosurgery**,** The Ottawa Hospital & Associate Professor, University of Ottawa |
| *May 1997-Feb 2002* | Richard Goldberg | MSc | CSE | Image editing in the contour domain (**Nominated for thesis award**) | Principal Manager – Account Technical Leaders, 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 |

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| | | | 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 semantic segmentation | Dalian University of Science & Technology | Doctoral Candidate |
| *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** |
|---|---|---|---|
| *Apr 2025-* | David White | Visual estimation of ground terrain | |
| *Feb 2025-* | Amin Alizadeh Naeini | Visual horizon estimation | |
| *Sept 2020-Jun 2021* | Nicholas Baker | Deep neural network selectivity for global shape | Assistant Professor, Loyal University, Chicago |
| *Nov 2019-Feb* | Azadeh Mozafari | Addressing the open-set problem in domain-adaptive | |

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|---|---|---|---|
| *2022* | | re-ID systems | |
| *Nov 2018-Nov 2022* | Shaiyan Keshvari | Configural shape processing in humans and deep networks | |
| *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* | Fadi Dornaika | | Charge de Recherche, Institut Geographique National, Paris, France |

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|---|---|---|
| *2002* | | |
| *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-Sept 2022* | Kartikeya Bhargava | Embedded AI systems | Software Engineer, York University |
| *2014* | Nada el-Assal | Attentive camera systems | Software Engineer, Google, USA |

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|---|---|---|---|
| *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-Sept 2024* | 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***

| | | | | |
|---|---|---|---|---|
| 2025 | Kentaro Suzuki | M.A. | Psychology | Practicum Supervisor |
| 2024-2025 | Mario Constantino | M.A. | Psychology | Supervisory Committee |
| 2024-2025 | Faiz Ahmed | M.Sc. | Electrical Engineering & Computer Science | Supervisory Committee |
| 2023-2024 | Yan Katcharovski | M.A.Sc | Mechanical Engineering | Supervisory Committee |
| 2024 | Maxym Yerkeyev | M.A. | Psychology | Examining Committee |
| *2023-2024* | Shaya Samet | M.A. | Psychology | Supervisory Committee |
| *2023* | Andrew Heyman | M.A. | Psychology | Examining Committee |
| *2022* | Rachel Moreau | M.A. | Psychology | Examining Committee |
| *2022-2024* | Nima Bathaie | M.Sc. | Electrical Engineering & Computer Science | Supervisory Committee |
| *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 | Supervisory Committee |

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|---|---|---|---|---|
| | | | Engineering & Computer Science | |
| *2020-2021* | Jasmeet Kaur | M.Sc. | Electrical Engineering & Computer Science | Supervisory Committee |
| *2019-2022* | Ryan Clark | Ph.D. | Earth & Space Science & Engineering | Supervisory Committee |
| *2019-2022* | 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 | Supervisory Committee |

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|---|---|---|---|---|
| | | | Science & Engineering | |
| *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 Science | Outside Examiner |
| *2001* | Marie Bomba | M.Sc. | Kinesiology & Health Science | Outside Examiner |
| *2001* | Ho-Kong Ng | M.Sc. | Computer Science | Outside Examiner |
| *2000* | Paul Doerfling | M. A. | Kinesiology | Dean's Representative |

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| | | | & Health Science | |
| *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**

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

## SERVICE

### Administrative Positions

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|---|---|
| *2025-* | Director, Centre for AI & Society (CAIS) |
| *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*

| | |
|---|---|
| *2025-2026* | Member, External Partner Committee, Department of Electrical Engineering and Computer Science |
| *2025-2026* | Member, Graduate Executive Committee, Department of Electrical Engineering and Computer Science |
| *2024-2025* | Member, Graduate Executive Committee, Department of Electrical Engineering and Computer Science |
| *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 |

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| *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***

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

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|---|---|
| *2025-2026* | Member, Mechatronics Undergraduate Program Committee |
| *2021-2024* | 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 |

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| *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***

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| *2024-2025* | Member, Ad Hoc School of Medicine Oversight Group |
| *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***

| | |
|---|---|
| *2024-2025* | Internal reviewer for NSERC Discovery grant application |
| *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 |

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| *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***

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|---|---|
| *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***

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|---|---|
| *2025* | Judge, Undergraduate Summer Research Conference |
| *2024* | Internal reviewer for York Research Chair application |
| *2023* | Invited speaker for *Protecting & Mobilizing your IP*, Lassonde School of Engineering |

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| *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***

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|---|---|
| *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**

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|---|---|
| *2024* | Meet the Professors, Vision Sciences Society Conference, Florida |
| *2023* | Meet the Professors, Vision Sciences Society Conference, Florida |
| *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**

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

**Last updated: October 2025**