

Curriculum Vitae

Alexander Wong, P.Eng.

Canada Research Chair in Medical Imaging Systems
Member of the College of the Royal Society of Canada
Associate Professor

Department of Systems Design Engineering
Cross Appointment, Department of Mechanical and Mechatronics Engineering
Cross Appointment, David R. Cheriton School of Computer Science
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1 PERSONAL DATA

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Associate Professor, Department of Systems Design Engineering
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EDUCATION AND RESEARCH POSITIONS

| | |
|--|--------------|
| University of Waterloo, Waterloo, ON <i>Canada Research Chair in Medical Imaging Systems (Tier II)</i> | 2013-Present |
| Amazon Alexa Program - Waterloo, Waterloo, ON <i>Academic Advisor</i> | 2018-Present |
| Schlegel Research Institute for Aging, Waterloo, ON <i>Research Scientist</i> | 2015-Present |
| Nvidia Deep Learning Institute, Waterloo, ON <i>University Ambassador and Certified Instructor</i> | 2017-Present |
| University of Waterloo, Waterloo, ON <i>Associate Professor, Dept. of Systems Design Engineering (July 2016-Present)</i> <i>Assistant Professor, Dept. of Systems Design Engineering (May 2011-June 2016)</i> <i>Cross Appointment, David R. Cheriton School of Computer Science (Dec 2016-)</i> <i>Cross Appointment, Department of Mechanical and Mechatronics Engineering (June 2015-)</i> | 2011-Present |
| Sunnybrook Health Sciences Centre, Toronto, ON <i>NSERC Postdoctoral Fellow, Dept. of Medical Biophysics</i> Focus: Computerized cancer analysis of multivariate prostate magnetic resonance imagery | 2010-2011 |
| University of Waterloo, Waterloo, ON <i>Ph.D. in Systems Design Engineering</i> Thesis: "Probabilistic complex phase representation objective function for multimodal image registration" | 2007-2010 |
| University of Waterloo, Waterloo, ON <i>M.A.Sc. in Electrical and Computer Engineering</i> Thesis: "Low Cost Visual/Inertial Hybrid Motion Capture System for Wireless 3D Controllers" | 2005-2007 |
| University of Waterloo, Waterloo, ON <i>B.A.Sc. Honours in Computer Engineering</i> | 2000-2005 |

1.1 PUBLICATIONS

In my field, journal papers are considered more important than conference papers. I have published at top journals in my area of research such as **(sorted by h5-index)**:

1. PLoS ONE (h5-index: 180)
2. Nature Scientific Reports (h5-index: 131)
3. Optics Express (h5-index: 105)
4. IEEE Transactions on Image Processing (h5-index: 92)
5. Optics Letters (h5-index: 80)
6. Pattern Recognition: The Journal of the Pattern Recognition Society (h5-index: 67)
7. IEEE Transactions on Medical Imaging (h5-index: 59)
8. IEEE Transactions on Biomedical Engineering (h5-index: 58)
9. IEEE Access Journal (h5-index: 57)
10. Biomedical Optics Express (h5-index: 51)
11. Medical Image Analysis (h5-index: 48)

I have published at top conferences in my area of research such as **(sorted by h5-index)**:

1. IEEE Conference on Computer Vision and Pattern Recognition (h5-index: 188)
2. Annual Conference on Neural Information Processing Systems (NIPS) (h5-index: 134)
3. IEEE International Conference on Computer Vision (h5-index: 124)
4. International Conference on Machine Learning (h5-index: 89)
5. IEEE Conference on Image Processing (h5-index: 41)
6. IEEE Conference of the IEEE Engineering in Medicine and Biology Society (h5-index: 31)
7. MICCAI (h5-index: 30)
8. IEEE International Symposium on Biomedical Imaging (h5-index: 23)

For papers co-authored with students, the general policy is to list the students as **lead authors** unless their contributions are significantly less than my contributions to the work. Students under my supervision are marked by * while postdoctoral fellows and research faculty under my supervision are marked by **

Publication Summary

(h-index: 39, i10-index: 165)

| | Publications | IEEE | Citations |
|----------------------------|--------------|------------|-------------|
| Patents | 6 | - | - |
| Patent Applications | 28 | - | - |
| Book Chapters | 6 | - | - |
| Journal papers | 210 | 62 | - |
| Conference papers | 286 | 118 | - |
| Non-refereed contributions | 24 | - | - |
| Total | 560 | 180 | 8028 |

Of the publications listed above, a total of 180 journals, 192 conference papers, 25 patent applications, 4 patents, 2 book chapters, and 13 non-referred contributions were published since I started in my position as Assistant Professor at University of Waterloo.

Refereed Journal Papers Accepted and Published (206)

- J1 L. Wang*, C. Dulhanty*, M. Cheng*, H. Gunraj*, F. Khalvati, M. Haider, and A. Wong, “Radiomics Driven Diffusion Weighted Imaging Sensing Strategies for Zone-level Prostate Cancer Sensing”, Sensors, 2020.
- J2 A. Al-Jebrni, B. Chwyl*, X. Wang, A. Wong, and B. Saab, “AI-Enabled Remote and Objective Quantification of Stress at Scale”, Biomedical Signal Processing and Control, 2020.
- J3 J. Callaghan, K. Fewster, M. Noguchi, C. Gooyers, and A. Wong, “Exploring the Regional Disc Bulge Response of the Intervertebral Disc Under Varying Loads and Postures”, Journal of Biomechanics, 2020.
- J4 P. Morita, A. Rocha, G. Shaker, D. Lee, J. Wei, B. Fong, A. Thatte, A. Karimi*, L. Xu**, A. Ma*, A. Wong, and J. Boger, “Comparative Analysis of Gait Speed Estimation Using 10GHz and 24GHz Radars, Thermal Camera, and Motion Tracking Suit Technologies”, Journal of Healthcare Informatics Research, 2020.
- J5 L. Yang, L. Xu**, J. Peng, Y. Song, A. Wong, and D. Clausi, “Nonlocal Band-weighted Iterative Spectral Mixture Model for Hyperspectral Imagery Denoising”, IEEE Transactions on Geoscience and Remote Sensing, 2020.
- J6 M. Shafiee**, A. Jeddi, A. Nazemi, P. Fieguth, and A. Wong, “Deep Neural Networks and Robust Autonomous Driving Systems”, IEEE Signal Processing Magazine, 2020.
- J7 Y. Chen, L. Xu**, Y. Fang, J. Peng, W. Yang, A. Wong, and D. Clausi, “Unsupervised Bayesian Subpixel Mapping of Hyperspectral Imagery Based on Band-weighted Discrete Spectral Mixture Model and Markov Random Field”, IEEE Geoscience and Remote Sensing Letters, 2020.
- J8 K. Fewster, S. Haider*, C. Gooyers, J. Callaghan, and A. Wong, “A computerized system for measurement of the radial displacement of the intervertebral disc using a laser device”, Computer Methods in Biomechanics and Biomedical Engineering, 2019.
- J9 V. Sankar, D. Kumar*, D. Clausi, G. Taylor, and A. Wong, “SISC: End-to-end Interpretable Discovery Radiomics-Driven Lung Cancer Prediction via Stacked Interpretable Sequencing Cells”, IEEE Access Journal, 2019.
- J10 A. Wong, M. Shafiee**, B. Chwyl, and F. Li, “GenSynth: a new way to understand deep learning”, (feature editorial article) IET Electronics Letters, 2019.
- J11 A. Wong, M. Shafiee**, B. Chwyl, and F. Li, “GenSynth: A generative synthesis approach to learning

- generative machines to generate efficient neural networks”, IET Electronics Letters, 2019.
- J12 A. Nazemi, Z. Azimifar, M. Shafiee**, and A. Wong, “Real-time Vehicle Make and Model Recognition Using Unsupervised Feature Learning”, IEEE Transactions on Intelligent Transportation Systems, 2019.
- J13 Z. Zhong*, J. Li, D. Clausi, and A. Wong, “Generative Adversarial Networks and Conditional Random Fields for Hyperspectral Image Classification”, IEEE Transactions on Cybernetics, 2019.
- J14 K. Pfisterer*, J. Boger, and A. Wong, “Prototyping the Automated Food Imaging and Nutrient Intake Tracking (AFINI-T) system: A modified participatory iterative design sprint”, JMIR Human Factors, 2019.
- J15 M. Shafiee**, B. Chwyl*, F. Li*, R. Chen, M. Karg, C. Scharfenberger, and A. Wong, “StressedNets: Efficient Feature Representations via Stress-induced Evolutionary Synthesis of Deep Neural Networks”, Neurocomputing, 2019.
- J16 C. Wang**, L. Xu**, D. Clausi, and A. Wong, “A Bayesian Joint Decorrelation and Despeckling of SAR Imagery”, IEEE Geoscience and Remote Sensing Letters, 2019.
- J17 D. Kumar*, G. Taylor, and A. Wong, “Discovery Radiomics with CLEAR-DR: Interpretable Computer Aided Diagnosis of Diabetic Retinopathy”, IEEE Access Journal, 2019.
- J18 J. Deglint*, C. Jin, and A. Wong, “The Feasibility of Automated Identification of Six Algae Types using Feed-forward Neural Networks and Fluorescence-based Spectral-morphological Features”, IEEE Access Journal, 2018.
- J19 A. Hryniowski*, Z. Azimifar, M. Lamm, P. Fieguth, and A. Wong, “Multi-Projector Content Preservation with Linear Filters”, Journal of Computational Vision and Imaging Systems, 2018.
- J20 I. Ben Daya*, M. Shafiee**, M. Karg, C. Scharfenberger, and A. Wong, “On Robustness of Deep Neural Networks: A Comprehensive Study on the Effect of Architecture and Weight Initialization to Susceptibility and Transferability of Adversarial Attacks”, Journal of Computational Vision and Imaging Systems, 2018.
- J21 W. McNally*, A. Wong, and J. McPhee, “Action Recognition using Deep Convolutional Neural Networks and Compressed Spatio-Temporal Pose Encodings”, Journal of Computational Vision and Imaging Systems, 2018.
- J22 J. Deglint*, L. Tang*, Y. Wang*, C. Jin, and A. Wong, “SAMSON: Spectral Absorption-fluorescence Microscopy System for ON-site-imaging of algae”, Journal of Computational Vision and Imaging Systems, 2018.
- J23 R. Bidart* and A. Wong, “MonolithNet: Training monolithic deep neural networks via a partitioned training strategy”, Journal of Computational Vision and Imaging Systems, 2018.
- J24 A. Wong, M. Shafiee**, and M. St. Jules, “MicronNet: A Highly Compact Deep Convolutional Neural Network Architecture for Real-time Embedded Traffic Sign Classification”, IEEE Access Journal, 2018.
- J25 I. Khodadad, M. Shafiee**, A. Wong, F. Kazemzadeh, and J. Arlette, “Deep Tissue Sequencing using Hypodermoscopy and Augmented Intelligence to Analyze Atypical Pigmented Lesions”, Journal of Cutaneous Medicine & Surgery, 2018.
- J26 L. Xu**, F. Yuan, A. Wong, and D. Clausi, “Unsupervised Bayesian Classification of Hyperspectral Image based on Spectral Mixture Model and Markov Random Field”, IEEE Journal on Special Topics in Remote Sensing, 2018.
- J27 M. Famouri, Z. Azimifar, and A. Wong, “A Novel Motion Plane-based Approach to Vehicle Speed Estimation”, IEEE Transactions on Intelligent Transportation Systems, 2018.
- J28 C. Jin**, M. Mesquita, J. Deglint*, M. Emelko, and A. Wong, “Quantification of cyanobacteria cells via a novel imaging-driven technique with an integrated fluorescence signature”, Nature Scientific Reports, 2018.
- J29 B. Tan, A. Wong, and K. Bizheva, “Enhancement of morphological and vascular features in OCT

- images using a modified Bayesian residual transform”, *Biomedical Optics Express*, 2018.
- J30 X. Wang, A. Wong, L. Peng, and P. Ho, “Cognitive-Empowered Femtocells: An Intelligent Paradigm for Femtocell Networks”, *Wireless Communications and Mobile Computing*, 2018.
- J31 F. Li*, L. Xu**, A. Wong, and D. Clausi, “ST-IRGS: A Region-Based Self-Training Algorithm applied to Hyperspectral Image Classification and Segmentation”, *IEEE Transactions on Geoscience and Remote Sensing*, 2018.
- J32 F. Khalvati**, J. Zhang, A. Chung*, M. Shafiee**, A. Wong, and M. Haider, “MPCaD: A Multi-Scale Radiomics-Driven Framework for Automated Prostate Cancer Localization and Detection”, *BMC Medical Imaging*, 2018.
- J33 R. Medeiros*, A. Wong, and J. Scharcanski, “Scalable Image Segmentation via Decoupled Sub-graph Compression Pattern Recognition”, *Pattern Recognition*, 2018.
- J34 M. Shafiee**, A. Mishra, and A. Wong, “Deep Learning with Darwin: Evolutionary Synthesis of Deep Neural Networks”, *Neural Processing Letters*, 2018.
- J35 K. Pfisterer, R. Amelard, A. Chung, and A. Wong, “A new take on measuring relative nutritional density: The feasibility of using a deep neural network to assess commercially-prepared pureed food concentrations”, *Journal of Food Engineering*, 2018.
- J36 J. Arlette, A. Wong, I. Khodadad, and F. Kazemzadeh, “Deep Tissue Sequencing using augmented intelligence to probe melanocytic lesions”, *Journal of Cutaneous Medicine and Surgery*, 2017.
- J37 M. Fani*, M. Yazdi, D. Clausi, and A. Wong, “Soccer Video Structure Analysis by Parallel Feature Fusion Network and Hidden-to-Observable Transferring Markov Model”, *IEEE Access Journal*, 2017.
- J38 T. Clark, J. Zhang, S. Baig, A. Wong, M. Haider, and F. Khalvati**, “Fully Automated Segmentation of Prostate Whole Gland and Transition Zone in Diffusion-weighted MRI using Convolutional Networks”, *Journal of Medical Imaging*, 2017.
- J39 M. Shafiee**, A. Chung*, F. Khalvati**, M. Haider, and A. Wong, “Discovery Radiomics via Evolutionary Deep Radiomic Sequencer Discovery for Pathologically-Proven Lung Cancer Detection”, *Journal of Medical Imaging*, 2017.
- J40 I. Ben Daya*, A. Chen, J. Yeow, and A. Wong, “Compensated Row-Column Ultrasound Imaging System Using Multilayered Edge Guided Stochastically Fully Connected Random Fields”, *Nature Scientific Reports*, 2017.
- J41 M. Shafiee*, P. Siva, P. Fieguth, and A. Wong, “Real-Time Embedded Motion Detection via Neural Response Mixture Modeling”, *Journal of Signal Processing Systems*, 2017.
- J42 L. Xu**, A. Wong, and D. Clausi, “A Novel Bayesian Spatial-Temporal Random Field Model Applied to Cloud Detection from Remotely Sensed Imagery”, *IEEE Transactions on Geoscience and Remote Sensing*, 2017.
- J43 T. Beltrame, R. Amelard*, A. Wong, and R. Hughson, “Extracting aerobic system dynamics during unsupervised activities of daily living using wearable sensor machine learning models”, *Journal of Applied Physiology*, 2017.
- J44 Y. Zhang, A. Oikonomou, M. Haider, A. Wong, and F. Khalvati**, “Radiomics-based Prognosis Analysis for Non-Small Cell Lung Cancer”, *Nature Scientific Reports*, 2017.
- J45 T. Beltrame, R. Amelard*, A. Wong, and R. Hughson, “Prediction of oxygen uptake dynamics by machine learning analysis of wearable sensors during activities of daily living”, *Nature Scientific Reports*, 2017.
- J46 F. Li*, H. Sekkati**, J. Deglint*, C. Scharfenberger**, M. Lamm, D. Clausi, J. Zelek, and A. Wong, “Simultaneous Projector-Camera Self-Calibration for 3D Reconstruction and Projection Mapping”, *IEEE Transactions on Computational Imaging*, 2017.
- J47 A. Chung*, P. Fieguth, and A. Wong, “Polyploidism in Deep Neural Networks: m-Parent Evolutionary

- Synthesis of Deep Neural Networks in Varying Population Sizes”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J48 A. Karimi*, M. Javad Shafiee**, A. Ghodsi, and A. Wong, “Ensembles of Random Projections for Nonlinear Dimensionality Reduction”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J49 K. Kasiri**, M. Javad Shafiee**, F. Li, A. Wong, and J. Eichel, “Efficient Deep Network Architecture for Vision-Based Vehicle Detection”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J50 M. Tran*, R. Amelard**, and A. Wong, “Integrating Multispectral Hemodynamic Imaging for Bulk Tissue Oxygenation Analysis”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J51 I. Ben Daya*, A. Chen*, M. Javad Shafiee**, J. Yeow, and A. Wong, “Compensated Row-Column Ultrasound Imaging System Using Edge-Guided Three Dimensional Random Fields”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J52 S. Gurm*, O. Badawy, and A. Wong, “A Multi-layer Perceptron Approach to Automatically Detect Tissue via NIR Multispectral Imaging”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J53 M. Javad Shafiee** and A. Wong, “Discovery Radiomics via Deep Multi-Column Radiomic Sequencers for Skin Cancer Detection”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J54 D. Kumar*, G. Taylor, and A. Wong, “Opening the Black Box of Financial AI with CLEAR-Trade: A Class-Enhanced Attentive Response Approach for Explaining and Visualizing Deep Learning-Driven Stock Market Prediction”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J55 A. Ma*, A. Wong, and D. Clausi, “Depth from Defocus via Active Multispectral Quasi-random Point Projections using Deep Learning”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J56 M. Javad Shafiee**, B. Chwyl*, F. Li*, and A. Wong, “Fast YOLO: A Fast You Only Look Once System for Real-time Embedded Object Detection in Video”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J57 A. MacLean*, K. Pfisterer*, D. Kumar*, R. Amelard*, and A. Wong, “Goldilocks and the Three Parameters: Empirically Finding the Just Right for Segmenting Food Images”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J58 J. Deglint*, C. Jin*, and A. Wong, “Automatic Identification of Cyanobacteria Genera Using Multi-band Epifluorescence Microscopy and Machine Learning”, *Journal of Computational Vision and Imaging Systems*, 2017.
- J59 R. Amelard*, R. Hughson, D. Greaves, K. Pfisterer, J. Leung, D. Clausi, and A. Wong, “Non-contact hemodynamic imaging reveals the jugular venous pulse waveform”, *Nature Scientific Reports*, 2016.
- J60 L. Xu**, A. Wong, and D. Clausi, “An Enhanced Probabilistic Posterior Sampling Approach for Synthesizing SAR Imagery with Sea Ice and Oil Spills”, *IEEE Geoscience and Remote Sensing Letters*, 2016.
- J61 F. Kazemzadeh* and A. Wong, “Laser Light-field Fusion for Wide-field Lensfree On-chip Phase Contrast Microscopy of Nanoparticles”, *Nature Scientific Reports*, 2016.
- J62 R. Amelard*, D. Clausi, and A. Wong, “Spatial probabilistic pulsatility model for enhancing photoplethysmographic imaging systems”, *Journal of Biomedical Optics*, 2016.
- J63 T. Beltrame, R. Amelard*, R. Villar, M. Shafiee*, A. Wong, and R. Hughson, “Estimating oxygen uptake and energy expenditure during treadmill walking by neural network analysis of easy-to-obtain inputs”, *Journal of Applied Physiology*, 2016.
- J64 R. Amelard*, D. Clausi, and A. Wong, “A spectral-spatial fusion model for robust blood pulse waveform extraction in photoplethysmographic imaging”, *Biomedical Optics Express*, 2016.
- J65 F. Kazemzadeh* and A. Wong, “Resolution- and throughput-enhanced spectroscopy using high-throughput computational slit”, *Optics Letters*, 2016.
- J66 M. Shafiee*, P. Fieguth, and A. Wong, “Deep Randomly-connected Conditional Random Fields For

- Image Segmentation”, IEEE Access Journal, 2016.
- J67 M. Shafiee*, P. Siva**, C. Scharfenberger, P. Fieguth, and A. Wong, “NeRD: a Neural Response Divergence Approach to Visual saliency detection”, IEEE Signal Processing Letters, 2016.
- J68 E. Li*, F. Khalvati**, M. Shafiee*, M. Haider, and A. Wong, “Sparse Reconstruction of Compressive Sensing MRI using Cross-Domain Stochastically Fully Connected Conditional Random Fields”, BMC Medical Imaging, 2016.
- J69 A. Boroomand*, M. Shafiee*, F. Khalvati**, M. Haider, and A. Wong, “Noise-Compensated, Bias-Corrected Diffusion Weighted Endorectal Magnetic Resonance Imaging via a Stochastically Fully-Connected Joint Conditional Random Field Model”, IEEE Transactions on Medical Imaging, 2016.
- J70 E. Li*, M. Shafiee*, F. Kazemzadeh*, and A. Wong, “Sparse Reconstruction of Compressive Sensing Multi-spectral Data using an Inter-Spectral Multi-layered Conditional Random Field Model”, IEEE Access Journal, 2016.
- J71 J. Deglint*, F. Kazemzadeh*, D. Cho*, D. Clausi, and A. Wong, “Numerical Demultiplexing of Color Image Sensor Measurements via Non-linear Random Forest Modeling”, Nature Scientific Reports, 2016.
- J72 M. Shafiee*, P. Siva**, and A. Wong, “StochasticNet: Forming Deep Neural Networks via Stochastic Connectivity”, IEEE Access Journal, 2016.
- J73 L. Xu**, M. Shafiee*, A. Wong, and D. Clausi, “Fully-Connected Continuous Conditional Random Field With Stochastic Cliques for Dark Spot Detection In SAR Imagery”, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2016.
- J74 S. Haider*, A. Cameron*, P. Siva**, N. Haider, A. Boroomand*, D. Lui*, M. Shafiee*, and A. Wong, “Noise-compensated fluoroscopy imaging using a stochastically-connected random field model”, Nature Scientific Reports, 2016.
- J75 M. Shafiee*, P. Fieguth, and A. Wong, “StochasticNet in StochasticNet”, Journal of Computational Vision and Imaging Systems, 2016.
- J76 C. Jin**, M. Mesqutia, M. Emelko, and A. Wong, “Automated enumeration and size distribution analysis of *Microcystis aeruginosa* via fluorescence imaging”, Journal of Computational Vision and Imaging Systems, 2016.
- J77 J. Zhang, S. Baig, A. Wong M. Haider, and F. Khalvati**, “A Local ROI-specific Atlas-based Segmentation of Prostate Gland and Transitional Zone in Diffusion MRI”, Journal of Computational Vision and Imaging Systems, 2016.
- J78 C. Jin**, M. Mesqutia, M. Emelko, A. Wong, “Computerized Enumeration and Bio-volume Estimation of the Cyanobacteria *Anabaena flos-aquae*”, Journal of Computational Vision and Imaging Systems, 2016.
- J79 J. Deglint*, K. Schoneveld*, F. Kazemzadeh*, and A. Wong, “A Compact Field-portable Computational Multispectral Microscope using Integrated Raspberry Pi”, Journal of Computational Vision and Imaging Systems, 2016.
- J80 A. Ma*, F. Li*, and A. Wong, “Depth from Defocus via Active Quasi-random Point Projections”, Journal of Computational Vision and Imaging Systems, 2016.
- J81 E. Kuang*, F. Kazemzadeh*, and A. Wong, “Enhanced Smartphone Spectroscopy via High-throughput Computational Slit”, Journal of Computational Vision and Imaging Systems, 2016.
- J82 A. Boroomand*, J. Deglint*, and A. Wong, “Bayesian Compensated Microscopy”, Journal of Computational Vision and Imaging Systems, 2016.
- J83 S. Haider*, F. Kazemzadeh*, and A. Wong, “Compact, Field-Portable Smartphone Chiral Molecule Concentration Estimation System via Multi-sensor Computational Polarimetry”, Journal of Computational Vision and Imaging Systems, 2016.

- J84 S. Greenberg* and A. Wong, "Art from Algorithms: Saliency-Guided Digital Projections", Journal of Computational Vision and Imaging Systems, 2016.
- J85 P. Dash, A. Mishra, and A. Wong, "Deep Quality: A Deep No-reference Quality Assessment System", Journal of Computational Vision and Imaging Systems, 2016.
- J86 I. Ben Daya*, M. Noguchi, J. Callaghan, and A. Wong, "Automated Histological Analysis System for Quantifying Microstructural Damage Accumulation to the Annulus Fibrosus", Journal of Computational Vision and Imaging Systems, 2016.
- J87 A. Chung* and A. Wong, "Noise Suppression and Contrast Enhancement via Bayesian Residual Transform (BRT) in Low-Light Conditions", Journal of Computational Vision and Imaging Systems, 2016.
- J88 S. Greenberg*, A. Wong, and J. McPhee, "Quasi-Monte and Data-Driven Monte Carlo Methods for Efficient Human Joint Model Fitting", Journal of Computational Vision and Imaging Systems, 2016.
- J89 A. Gawish, L. Haines, S. Marschall, A. Wong, L. Sorbara, K. Bizheva, P. Fieguth, "Improved OCT Human Corneal segmentation Using Bayesian Residual Transform", Journal of Computational Vision and Imaging Systems, 2016.
- J90 B. Chwyl*, R. Amelard*, D. Clausi, and A. Wong, "A Bayesian Multi-Scale Framework for Photoplethysmogram Imaging Waveform Processing", Journal of Computational Vision and Imaging Systems, 2016.
- J91 M. Wilson*, R. Amelard*, D. Clausi, A. Wong, "Co-integrating thermal and hemodynamic imaging for physiological monitoring", Journal of Computational Vision and Imaging Systems, 2016.
- J92 F. Khalvati**, J. Zhang, S. Baig, M. Haider, and A. Wong, "Sparse Correlated Diffusion Imaging: A New Computational Diffusion MRI Modality for Prostate Cancer Detection", Journal of Computational Vision and Imaging Systems, 2016.
- J93 F. Kazemzadeh*, E. Kuang*, and A. Wong, "Compact, Field-Portable Lens-free Microscope using Superresolution Spatio-Spectral Light-field Fusion", Journal of Computational Vision and Imaging Systems, 2016.
- J94 A. Chung*, F. Khalvati**, M. Shafiee*, M. Haider, and A. Wong, "Prostate Cancer Detection via a Quantitative Radiomics-Driven Conditional Random Field Framework", IEEE Access Journal, 2015.
- J95 I. Ben Daya*, A. Chen, J. Yeow, and A. Wong, "Compensated Row-Column Ultrasound Imaging System Using Fisher Tippett Multilayered Conditional Random Field Model", PLoS ONE, 2015.
- J96 A. Cameron*, F. Khalvati**, A. Wong, and M. Haider, "MAPS: A Quantitative Radiomics Approach for Prostate Cancer Detection", IEEE Transactions on Biomedical Engineering, 2015.
- J97 D. Lui*, A. Modhafar*, A. Wong, and M.A. Haider, "Monte Carlo-based Noise Compensation in Coil Intensity Corrected Endorectal MRI", BMC Medical Imaging, 2015.
- J98 R. Amelard*, C. Scharfenberger**, F. Kazemzadeh*, K.J. Pfisterer, B. Lin*, D. Clausi, and A. Wong, "Feasibility of long-distance heart rate monitoring using transmittance photoplethysmographic imaging (PPGI)", Nature Scientific Reports, 2015. **[In the top 5% of all research outputs scored by Altmetric with a score of 160]**
- J99 F. Kazemzadeh*, C. Jin, S. Molladavoodi, M. Emelko, M. Gorbet, and A. Wong, "Lensfree Spectral Light-field Fusion Microscopy for Contrast- and Resolution-enhanced Imaging of Biological Specimens", Optics Letters, 2015.
- J100 M. Shafiee*, Z. Azimifar, and A. Wong, "A Deep-structured Conditional Random Field Model for Object Silhouette Tracking", PLoS ONE, 2015.
- J101 F. Li*, L. Xu**, A. Wong, and D. Clausi, "Feature Extraction for Hyperspectral Imagery via Ensemble Localized Manifold Learning", IEEE Geosciences and Remote Sensing Letters, 2015.
- J102 L. Xu**, F. Li*, A. Wong, and D. Clausi, "Intrinsic Representation of Hyperspectral Imagery For

- Unsupervised Feature Extraction”, IEEE Transactions on Geoscience and Remote Sensing, 2015.
- J103 L. Xu**, F. Li*, A. Wong, and D. Clausi, “Extraction of Endmembers From Hyperspectral Images Using A Weighted Fuzzy Purified-Means Clustering Model”, IEEE Journal on Special Topics in Remote Sensing, 2015.
- J104 R. Sachett Medeiros, J. Scharcanski, and A. Wong, “Image Segmentation via Stochastic Regional Texture Appearance Models”, Computer Vision and Image Understanding, 2015.
- J105 F. Khalvati**, A. Wong, and M. Haider, “Automated Prostate Cancer Detection via Comprehensive Multi-Parametric Magnetic Resonance Imaging Texture Feature Models”, BMC Medical Imaging, 2015.
- J106 S. Schwartz*, A. Wong, and D.A. Clausi, “Optimized sampling distribution based on learning for improved compressive sensing performance”, Visual Communication and Image Representation, 2015.
- J107 A. Wong and X. Wang, “Bayesian Residual Transform for Signal Processing”, IEEE Access Journal, 2015.
- J108 A. Wong, X. Wang, and M. Gorbet, “Bayesian-based deconvolution fluorescence microscopy using dynamically updated nonparametric nonstationary expectation estimates”, Nature Scientific Reports, 2015.
- J109 A. Wong, F. Kazemzadeh*, C. Jin, and X. Wang, “Bayesian-based aberration correction and numerical diffraction for improved lensfree on-chip microscopy of biological specimens”, Optics Letters, 2015.
- J110 A. Wong, M. Shafiee*, P. Siva, and X. Wang, “A deep-structured fully-connected random field model for structured inference”, IEEE Access Journal, 2015.
- J111 F. Li*, L. Xu**, P. Siva, A. Wong, and D. Clausi, “Hyperspectral Image Classification with Limited Labeled Training Samples using Enhanced Ensemble Learning and Conditional Random Fields”, IEEE Journal on Special Topics in Remote Sensing, 2015.
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- C26 R. Bidart* and A. Wong, “Affine Variational Autoencoders: An Efficient Approach for Improving Generalization and Robustness to Distribution Shift”, the proceedings of International Conference on Machine Learning (ICML) Workshops, 2019.
- C27 Z. Lin*, B. Chwyl, and A. Wong, “EdgeSegNet: A Compact Network for Semantic Segmentation”, the proceedings of International Conference on Machine Learning (ICML) Workshops, 2019.
- C28 K. Pfisterer*, J. Boger, and A. Wong, “Food for Thought: Ethical considerations of user trust in computer vision”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C29 I Ben Daya*, M. Shafiee**, M. Karg, C. Scharfenberger, and A. Wong, “SANE: Towards Improved Prediction Robustness via Stochastically Activated Network Ensembles”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C30 L. Wang* and A. Wong, “Implications of Computer Vision Driven Assistive Technologies Towards Individuals with Visual Impairment”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C31 C. Dulhanty* and A. Wong, “Auditing ImageNet: Towards A Model-driven Framework for Annotating Demographic Attributes of Large-Scale Image Datasets”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C32 R. Bond, A. Koene, A. Dix, J. Boger, M. Mulvenna, M. Galushka, B. Waterhouse-Bradley, F. Browne, H. Wang, and A. Wong, “Democratisation of Usable Machine Learning in Computer Vision”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C33 I Ben Daya*, M. Shafiee**, M. Karg, C. Scharfenberger, and A. Wong, “SANE: Exploring Adversarial Robustness With Stochastically Activated Network Ensembles”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C34 D. Kumar*, I Ben Daya*, K. Vats*, J. Feng, G. Taylor, and A. Wong, “Beyond Explainability: Leveraging Interpretability for Improved Adversarial Learning”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C35 L. Wang* and A. Wong, “Enabling Computer Vision Driven Assistive Devices for the Visually Impaired via Micro-architecture Design Exploration”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C36 K. Pfisterer*, R. Amelard, B. Syrnyk*, and A. Wong, “Towards computer vision powered color-nutrient

- assessment of puréed food”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C37 X. Hu*, M. Naiel**, P. Fieguth, and A. Wong, “RUNet: A Robust UNet Architecture for Image Super-Resolution”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C38 X. Hu*, M. Naiel**, P. Fieguth, and A. Wong, “ClearGAN: Photo-Realistic High-Resolution Text-to-Image Synthesis via Joint Inter-modal and Intra-modal Attention Modeling”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C39 A. Chung*, P. Fieguth, and A. Wong, “Assessing Architectural Similarity in Populations of Deep Neural Networks”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C40 A. Wong, Z. Lin*, and B. Chwyl, “AttoNets: Compact and Efficient Deep Neural Networks for the Edge via Human-Machine Collaborative Design”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C41 M.S. Shafiee**, M. Shafiee**, and A. Wong, “Dynamic Representations Toward Efficient Inference on Deep Neural Networks by Decision Gates”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C42 W. McNally*, K. Vats, T. Pinto, C. Dulhanty*, J. McPhee, and A. Wong, “GolfDB: A Video Database for Golf Swing Sequencing”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2019.
- C43 B. Laschowski, W. McNally*, J. McPhee, and A. Wong, “Preliminary Design of an Environment Recognition System for Controlling Robotic Lower-Limb Prostheses and Exoskeletons”, the proceedings of IEEE-RAS-EMBS International Conference on Rehabilitation Robotics (ICORR), 2019. **Won Fourth Prize Poster Award.**
- C44 W. McNally*, J. McPhee, and A. Wong, “STAR-Net: Action Recognition using Spatio-Temporal Activation Reprojection”, the proceedings of Computer and Robotic Vision Conference, 2019.
- C45 L. Xu**, Y. Fang, A. Wong, and D. Clausi, “Unsupervised Feature Learning via Deep Stacked Autoencoder for Improved LUT Inversion of Biochemical and Biophysical parameters using the PROSAIL model”, the proceedings of the Canadian Symposium on Remote Sensing & Geomatics Atlantic, 2019.
- C46 L. Xu**, Y. Fang, A. Wong, and D. Clausi, “A python-based batch-processing Photoscan plugin for fast stitching large-volume UAV snapshot hyperspectral images”, the proceedings of the Canadian Symposium on Remote Sensing & Geomatics Atlantic, 2019.
- C47 Y. Fang, Z. Hu, L. Xu**, A. Wong, and D. Clausi, “Estimation of iron concentration in soil of a mining area from UAV-based hyperspectral imagery”, the proceedings of the Canadian Symposium on Remote Sensing & Geomatics Atlantic, 2019.
- C48 P. Pfisterer*, H. Keller, L. Duizer, and A. Wong, “A novel approach to automatically categorize food items for understanding food intake patterns and its application to food consumption frequencies in Canadian long-term care homes”, the proceedings of the Canadian Nutrition Society 2019 Annual Conference, 2019.
- C49 Z. Hosseinae, H. Le, O. Kralj, A. Wong, L. Sorbara, and K. Bizheva, “Fully automated segmentation algorithm for corneal nerves analysis from in-vivo UHR-OCT images”, the proceedings of the 2019 ARVO Annual Meeting, 2019.
- C50 J. Deglint*, C. Jin, and A. Wong, “Analysis of the Automatic Classification of Ten Types of Algae using a Custom Multispectral Microscope and Deep Learning”, the proceedings of Ontario’s Water Conference & Trade Show, 2019.
- C51 P. Morita, A. Rocha, G. Shaker, D. Lee, J. Wei, B. Fong, A. Thatte, A. Karimi*, L. Xu**, A. Ma*, A. Wong, and J. Boger, “Comparison of Gait Speed Estimation of Multiple Sensor-based Technologies”, International Symposium on Human Factors and Ergonomics in Health Care (HFES 2019), 2019.
- C52 J. Deglint*, C. Jin, and A. Wong, “A Multispectral Bayesian-based Computational Microscopy Method for

Enhancing Image Quality”, the proceedings of SPIE Photonics West, 2019.

- C53 D. Kabiljagic*, and A. Wong, “Resolution-enhanced digital epiluminescence microscopy using a deep computational optics”, the proceedings of SPIE Photonics West, 2019.
- C54 F. Kazemzadeh*, and A. Wong, “Enhanced spectral lightfield fusion microscopy via deep computational optics for whole-slide pathology”, the proceedings of SPIE Photonics West, 2019.
- C55 X. Hu, A. Chung*, P. Fieguth, F. Khalvati, M. Haider, and A. Wong, “ProstateGAN: Mitigating Data Bias via Prostate Diffusion Imaging Synthesis with Generative Adversarial Networks”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2018.
- C56 A. Wong, M. Shafiee**, B. Chwyl, and F. Li, “FermiNets: Learning generative machines to generate efficient neural networks via generative synthesis”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2018.
- C57 Z. Lin*, A. Chung*, and A. Wong, “EdgeSpeechNets: Highly Efficient Deep Neural Networks for Speech Recognition on the Edge”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2018.
- C58 A. Chung*, P. Fieguth, and A. Wong, “Mitigating Architectural Mismatch During the Evolutionary Synthesis of Deep Neural Networks”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2018.
- C59 M.S. Shafiee*, M. Shafiee**, and A. Wong, “Efficient Inference on Deep Neural Networks by Dynamic Representations and Decision Gates”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2018.
- C60 J. Deglint*, J. Chao**, and A. Wong, “Investigation of the Fusion of Spectral and Morphological Characteristics of Algae for Automatic Classification” in the proceedings of the AWWA Water Quality Technology Conference and Exposition, 2018.
- C61 A. Boroomand**, J. Wei, J. Boger, G. Shaker, A. Wong, and P. Morita, “Autonomous Tracking of Older Adults Normal and Slow Walking Speeds Using 24GHz Radar” in the proceedings of the International Joint Conferences on Artificial Intelligence (IJCAI) workshops, 2018.
- C62 Y. Fang, L. Xu**, J. Peng, Wang, H. Wang, D. Clausi, and A. Wong, “Retrieval and Mapping of Heavy Metal Concentration in Soil Using Time Series Landsat 8 Images” in the proceedings of the International Society for Photogrammetry and Remote Sensing (ISPRS) Technical Commission III Symposium on Developments, Technologies and applications in Remote Sensing, 2018.
- C63 A. Ma*, D. Clausi, and A. Wong, “Deep Learning-driven Depth from Defocus via Active Multispectral Quasi-random Projections with Complex Subpatterns”, in the proceedings of the Conference on Computer and Robot Vision (CRV), 2018.
- C64 A. Chung*, P. Fieguth, and A. Wong, “Nature vs. Nurture: The Role of Environmental Resources in Evolutionary Deep Intelligence”, in the proceedings of the Conference on Computer and Robot Vision (CRV), 2018.
- C65 A. Hryniowski*, I. Ben Daya*, A. Gawish**, M. Lamm, A. Wong, and P. Fieguth, “Multi-Projector Resolution Enhancement through Biased Interpolation”, in the proceedings of the Conference on Computer and Robot Vision (CRV), 2018.
- C66 H. Neuer*, K. Vats*, A. Wong, and D. Clausi, “HyperStackNet: A hyper stacked hourglass deep convolutional neural network architecture for joint player and stick pose estimation in hockey”, in the proceedings of the Conference on Computer and Robot Vision (CRV), 2018.
- C67 A. Wong, M. Shafiee**, F. Li*, and B. Chwyl*, “Tiny SSD: A Tiny Single-shot Detection Deep Convolutional Neural Network for Real-time Embedded Object Detection”, in the proceedings of the Conference on Computer and Robot Vision (CRV), 2018.
- C68 A. Ma*, A. Gawish**, M. Lamm, A. Wong, and P. Fieguth, “Real-time Spatial-based Projector Resolution Enhancement”, the proceedings of Conference of Society of Information Display, 2018.
- C69 S. Haider*, M. Tran*, and A. Wong, “Computational circular dichroism estimation for point-of-care

- diagnostics via vortex half-wave retarders”, the proceedings of SPIE Photonics West, 2018.
- C70 K. Pfisterer*, R. Amelard*, and A. Wong, “Differential color space analysis for investigating nutrient content in a pureed food dilution-flavor matrix: a step toward objective malnutrition risk assessment”, the proceedings of SPIE Photonics West, 2018.
- C71 R. Amelard*, K. Pfisterer*, S. Jagani, D. Clausi, and A. Wong, “Non-contact assessment of obstructive sleep apnea cardiovascular biomarkers using photoplethysmography imaging”, the proceedings of SPIE Photonics West, 2018.
- C72 D. Kumar*, V. Menkovski, G. Taylor, and A. Wong, “Understanding anatomy classification through attentive response maps”, in the proceedings of the IEEE International Symposium on Biomedical Imaging, 2018.
- C73 A. Boroomand**, P. Morita, G. Shaker, A. Wong, and J. Boger, “Autonomous Gait Speed Estimation using 24GHz FMCW Radar Technology”, the proceedings of IEEE International Conference on Biomedical and Health Informatics, 2018.
- C74 M. Shafiee**, F. Li*, B. Chwyl*, and A. Wong, “SquishedNets: Squishing SqueezeNet further for edge device scenarios via deep evolutionary synthesis”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2017.
- C75 D. Kumar*, G. Taylor, and A. Wong, “CLEAR-DR: Interpretable Computer Aided Diagnosis of Diabetic Retinopathy”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2017. **Won Best Paper Award.**
- C76 A. Karimi*, E. Banijamali1*, A. Wong, and A. Ghodsi, “JADE: Joint Autoencoders for Dis-Entanglement”, the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshops, 2017.
- C77 A. Chung*, M. Shafiee*, P. Fieguth, and A. Wong, “The Mating Rituals of Deep Neural Networks: Learning Compact Feature Representations through Sexual Evolutionary Synthesis”, the proceedings of IEEE International Conference on Computer Vision Workshops (IEEE ICCV), 2017.
- C78 M. Shafiee*, E. Barshan*, F. Li*, B. Chwyl*, M. Karg, C. Scharfenberger, and A. Wong, “Learning Efficient Deep Feature Representations via Transgenerational Genetic Transmission of Environmental Information during Evolutionary Synthesis of Deep Neural Networks”, the proceedings of IEEE International Conference on Computer Vision Workshops (IEEE ICCV), 2017.
- C79 D. Kumar*, G. Taylor, and A. Wong, “Explaining the Unexplained: A CLass-Enhanced Attentive Response (CLEAR) Approach to Understanding Deep Neural Networks”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2017.
- C80 H. Neher*, M. Fani, D. Clausi, A. Wong, and J. Zelek, “Hockey Activity Recognition via Integrated Stacked Hourglass Network”, the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2017.
- C81 H. Neher*, M. Fani, D. Clausi, A. Wong, and J. Zelek, “Pose Estimation of Players in Hockey Videos using Convolutional Neural Networks”, the proceedings of Ottawa Hockey Analytics Conference, 2017. **Won Best Student Paper Award.**
- C82 M. Shafiee**, F. Li*, and A. Wong, “Exploring the Imposition of Synaptic Precision Restrictions for Evolutionary Synthesis of Deep Neural Networks”, the proceedings of Conference on Cognitive Computational Neuroscience, 2017.
- C83 A. Karimi*, M. Shafiee**, A. Ghodsi, and A. Wong, “Synthesizing Deep Neural Network Architectures using Biological Synaptic Strength Distributions”, the proceedings of Conference on Cognitive Computational Neuroscience, 2017.
- C84 S. Greenberg*, A. Chung*, and A. Wong, “Nebula: Live Dynamic Projection Mapping via Object Saliency”, the proceedings of Bridges 2017 conference, 2017.
- C85 M. Shafiee**, P. Fieguth, and A. Wong, “Forming A Random Field via Stochastic Cliques: From Random Graphs to Fully Connected Random Fields”, the proceedings of Future Technologies Conference (FTC), 2017.
- C86 M. Shafiee**, E. Barshan, and A. Wong, “Evolution in Groups: A deeper look at synaptic cluster driven evolution of deep neural networks”, the proceedings of Future Technologies Conference (FTC), 2017.

- C87 B. Chwyl*, A. Chung*, M. Shafiee*, Y. Fu, and A. Wong, "DeepPredict: A Deep Predictive Intelligence Platform for Patient Monitoring", the proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC), 2017.
- C88 S. Haider*, F. Kazemzadeh*, and A. Wong, "Computational laser intensity stabilisation for organic molecule concentration estimation in low-resource settings", the proceedings of SPIE Photonics West, 2017.
- C89 A. Boroomand*, A. Wong, and K. Bizheva, "A Stochastically Fully Connected Conditional Random Field Framework for Super Resolution OCT", the proceedings of SPIE Photonics West, 2017.
- C90 R. Amelard*, R. L. Hughson, D. A. Clausi, A. Wong, "Non-contact arrhythmia assessment in natural settings: a step toward preventive cardiac care", the proceedings of SPIE Photonics West, 2017.
- C91 R. Amelard*, R. L. Hughson, D. A. Clausi, A. Wong, "Assessing photoplethysmographic imaging performance beyond facial perfusion analysis", the proceedings of SPIE Photonics West, 2017.
- C92 A. Gawish, J. Deglint*, K. Zuj, M. Egana, J. Rocha, A. Wong, and R. Hughson, "Determining arterial blood velocity using MAUI software from recorded Doppler ultrasound videos", the proceedings of the Annual Meeting of North American Artery, 2017.
- C93 T. Clark, A. Wong, F. Khalvati**, and M.A. Haider, "Fully Deep Convolutional Neural Networks for Segmentation of the Prostate Gland in Diffusion-Weighted MR Images", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C94 J. Zhang, S. Baig, A. Wong, F. Khalvati**, and M.A. Haider, "Segmentation of Prostate in Diffusion MR Images via Clustering", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C95 D. Cho*, F. Khalvati**, D. Clausi, and A. Wong, "A Machine Learning-Driven Approach to Computational Physiological Modeling of Skin Cancer", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C96 A. Karimi*, A. Chung*, M. Shafiee*, F. Khalvati**, M.A. Haider, A. Ghodsi, and A. Wong, "Discovery Radiomics via a Mixture of Deep ConvNet Sequencers for Multi-Parametric MRI Prostate Cancer Classification", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C97 D. Kumar*, A. Chung*, M. Shafiee*, F. Khalvati**, M.A. Haider, and A. Wong, "Discovery Radiomics for Pathologically-Proven Computed Tomography Lung Cancer Prediction", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C98 I. Ben Daya*, A. Chen, M. Shafiee*, A. Wong, and J. Yeow, "Compensated Row-Column Ultrasound Imaging System Using Three Dimensional Conditional Random Fields", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C99 A. Ma* and A. Wong "Depth from Defocus via Active Quasi-random Point Projections: A Deep Learning Approach", Proc. International Conference on Image Analysis and Recognition (ICIAR), 2017.
- C100 A. Boroomand*, M. Shafiee*, L. Wang*, E. Kuang*, F. Kazemzadeh*, and A. Wong, "Compensated lens-free light field spectroscopy", Proc. International Conference on Inverse Problems in Engineering (ICIPE), 2017.
- C101 A. Ma* and A. Wong, "Depth from defocus via active quasi-random point projections", Proc. International Conference on Inverse Problems in Engineering (ICIPE), 2017.
- C102 F. Khalvati**, J. Zhang, S. Baig, A. Wong, and M.A. Haider, "Flipping the Computer Aided Diagnosis (CAD) Training Paradigm for Prostate Cancer: Using PIRADS Reporting of Multi-Parametric MRI (mpMRI) to Train a CAD System and then Validating with Pathology", Proc. Annual Meeting of the Imaging Network of Ontario, 2017.
- C103 A. Karimi*, A. Chung*, M. Shafiee*, F. Khalvati**, M.A. Haider, A. Ghodsi, and A. Wong "Discovery Radiomics via a Mixture of Expert Sequencers using Layered Random Projections (LaRP) for Prostate Cancer Classification", Proc. Annual Meeting of the Imaging Network of Ontario, 2017.
- C104 D. Kumar*, V. Menkovski*, F. Khalvati**, M.A. Haider, and A. Wong "Deep Medical Imaging Visualization for Clinical Decision Support", Proc. Annual Meeting of the Imaging Network of Ontario, 2017.
- C105 I. Ben Daya*, A. Chen, M. Shafiee*, A. Wong, and J. Yeow, "Compensated Row-Column Ultrasound Imaging System Using Conditional Random Fields", Proc. Annual Meeting of the Imaging Network of Ontario, 2017.

- C106 P. Dash, A. Mishra, and A. Wong, "VeNICE: A Very Deep Neural Network Approach to No-Reference Image Assessment", the proceedings of IEEE International Conference on Industrial Technology, 2017.
- C107 T. Hesham, H. Zhao, and A. Wong, "Unsupervised Domain Adaptation with a Relaxed Covariate Shift Assumption", the proceedings of AAAI Conference on Artificial Intelligence, 2017.
- C108 M. Shafiee** and A. Wong, "Evolutionary Synthesis of Deep Neural Networks via Synaptic Clusterdriven Genetic Encoding", the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshop on Efficient Methods for Deep Neural Networks, 2016. **Won Best Paper Award.**
- C109 F. Khalvati**, J. Zhang, A. Wong, and M. Haider, "Bag of Bags: Nested Multi Instance Classification for Prostate Cancer Detection", the proceedings of the IEEE International Conference on Machine Learning and Applications, 2016.
- C110 K. Zuj, J. Deglint*, A. Gawish, A. Wong, D. Clausi, and R. Hughson, "A new software for determining changes in arterial diameter over time", the proceedings of the Annual Meeting of North American Artery, 2016.
- C111 M. Schulze, A. Wong, S. Haider*, E. Kingsley, Z. Fadli, C. Coles-Brennan, and L. Jones, "Blink rate in silicone hydrogel contact lens wearers during digital device use", the proceedings of Annual Meeting of the American Academy of Optometry (Academy 2016), 2016.
- C112 A. Boroomand*, E. Li*, M. Shafiee*, F. Khalvati**, M. Haider, and A. Wong, "A Unified Bayesian-based Compensated Magnetic Resonance Imaging", the proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC), 2016.
- C113 F. Khalvati**, J. Zhang, M. Haider, and A. Wong, "Enhanced Dual-Stage Correlated Diffusion Imaging", the proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC), 2016.
- C114 A. Karimi*, M. Shafiee*, C. Scharfenberger**, I. Ben Daya*, S. Haider*, N. Talkudar*, D. Clausi, and A. Wong, "Spatio-temporal saliency detection using abstracted fully-connected graphical models", the proceedings of IEEE Conference on Image Processing (IEEE ICIP), 2016.
- C115 A. Chung*, M. Shafiee*, and A. Wong, "Random feature maps via a layered random projection (LaRP) framework for object classification", the proceedings of IEEE Conference on Image Processing (IEEE ICIP), 2016.
- C116 B. Chwyl*, A. Chung*, R. Amelard*, J. Deglint*, D. Clausi, and A. Wong, "SAPPHIRE: Stochastically Acquired Photoplethysogram for Heart Rate Inference in Realistic Environments", the proceedings of IEEE Conference on Image Processing (IEEE ICIP), 2016.
- C117 A. Boroomand*, H. Sekkati**, M. Lamm, D. Clausi, and A. Wong, "Saliency-guided projection geometric correction using a projector-camera system", the proceedings of IEEE Conference on Image Processing (IEEE ICIP), 2016.
- C118 M. Shafiee*, P. Siva**, P. Fieguth, and A. Wong, "Embedded Motion Detection via Neural Response Mixture Background Modeling", the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2016.
- C119 P. Siva**, M. Shafiee*, M. Jamieson, and A. Wong, "Scene Invariant Crowd Segmentation and Counting Using Scale-Normalized Histogram of Moving Gradients (HoMG)", the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2016. (Participated in the design for algorithm).
- C120 M. Shafiee*, P. Siva**, P. Fieguth, and A. Wong, "Efficient Feature Learning and Extraction via StochasticNets", the proceedings of IEEE Computer Vision and Pattern Recognition Workshops (IEEE CVPRW), 2016.
- C121 A. Chung*, M. Shafiee*, and A. Wong, "Image Restoration via Deep-Structured Stochastically Fully-Connected Conditional Random Fields (DSFCRFs) for Very Low-Light Conditions", in the proceedings of the Conference on Computer and Robot Vision (CRV), 2016.
- C122 B. Chwyl*, A. Chung*, R. Amelard*, J. Deglint*, D. Clausi, and A. Wong, "Time-Frequency Domain Analysis via Pulselets for Non-Contact Heart Rate Estimation from Remotely Acquired Photoplethysmograms", in the

- proceedings of the Conference on Computer and Robot Vision (CRV), 2016.
- C123 S. Greenberg*, A. Chung*, B. ChywI*, and A. Wong, "TIGGER: A Texture-Illumination Guided Global Energy Response Model for Illumination Robust Object Saliency", in the proceedings of the Conference on Computer and Robot Vision (CRV), 2016.
- C124 F. Li*, J. Zelek, and A. Wong, "Hierarchical Grouping Approach for Fast Approximate RGB-D Scene Flow", in the proceedings of the Conference on Computer and Robot Vision (CRV), 2016.
- C125 A. Gawish, C. Scharfenberger, H. Bi, A. Wong, P. Fieguth, and D. Clausi, "Robust non-saliency guided watermarking", in the proceedings of the Conference on Computer and Robot Vision (CRV), 2016.
- C126 A. Chung*, M. Shafiee*, D. Kumar*, F. Khalvati**, M.A. Haider, and A. Wong "Discovery Radiomics via Layered Random Projection (LaRP) Sequencers for Prostate Cancer Classification", Proc. Annual Meeting of the Imaging Network of Ontario, 2016. **Won Magna Cum Laude Paper Award.**
- C127 D. Kumar*, M. Shafiee*, A. Chung*, F. Khalvati**, M.A. Haider, and A. Wong "Discovery Radiomics for Lung Cancer Classification", Proc. Annual Meeting of the Imaging Network of Ontario, 2016.
- C128 A. Eilaghi, S. Baig, J. Zhang**, A. Wong, P. Karanicolas, S. Gallinger, F. Khalvati**, and M.A. Haider, "Radiomics Features Analysis for Tumor Characterization in Pancreatic Ductal Adenocarcinoma", Proc. Annual Meeting of the Imaging Network of Ontario, 2016. **Won Magna Cum Laude Paper Award.**
- C129 J. Zhang**, A. Eilaghi, M.A. Haider, A. Wong, and F. Khalvati** "Optimized Correlated Diffusion Imaging for Prostate Cancer Detection", Proc. Annual Meeting of the Imaging Network of Ontario, 2016.
- C130 J. Zhang**, A. Eilaghi, A. Wong, M.A. Haider, and F. Khalvati** "Radiomics Feature Clusters and Prognostic Signatures Specific for Lung Cancer", Proc. Annual Meeting of the Imaging Network of Ontario, 2016.
- C131 F. Kazemzadeh* and A. Wong "Whole-Slide Digital Pathology via Lens-free Spectral Light-field Fusion Microscopy", Proc. Annual Meeting of the Imaging Network of Ontario, 2016.
- C132 A. Boroomand*, E. Li*, M. Shafiee*, F. Khalvati**, M.A. Haider, and A. Wong "A Unified Reconstruction Framework for Compensated Magnetic Resonance Imaging", Proc. Annual Meeting of the Imaging Network of Ontario, 2016. (Co-design of system)
- C133 D. Cho*, D. Clausi, and A. Wong "Accuracy of Melanoma Classification using Dermal Radiomic Sequences", Proc. Annual Meeting of the Imaging Network of Ontario, 2016.
- C134 S. Haider*, A. Chung*, M. Shafiee*, H. Grewal*, F. Khalvati**, A. Oikonomou, M.A. Haider, and A. Wong "Single-Click Lung Nodule Contouring Method Using a Hierarchical Conditional Random Field (HCRF)", Proc. Annual Meeting of the Imaging Network of Ontario, 2016. **Won Cum Laude Paper Award.**
- C135 K. Bizheva, B. Tan, E. Mason, B. MacLellan, L. Haines, A. Boroomand*, A. Wong, and L. Sorbara, "Structure and vasculature of the human corneo-scleral limbus as imaged in-vivo with sub-micrometer axial resolution OCT", Proc. ARVO Imaging in the Eye Conference, 2016.
- C136 M. Shafiee*, A. Chung*, D. Kumar, F. Khalvati, M. Haider, and A. Wong, "Discovery Radiomics via StochasticNet Sequencers for Cancer Detection", the proceedings of Annual Conference on Neural Information Processing Systems (NIPS) Workshop on Machine Learning for Healthcare, 2015.
- C137 R. Amelard*, D.A. Clausi, and A. Wong, "Spectral photoplethysmographic imaging sensor fusion for enhanced heart rate detection", the proceedings of SPIE Photonics West, 2015.
- C138 J. Deglint*, A. Chung*, B. ChywI*, R. Amelard*, F. Kazemzadeh*, X. Wang, D.A. Clausi, and A. Wong, "Photoplethysmographic imaging via spectrally demultiplexed erythema fluctuation analysis for remote heart rate monitoring", the proceedings of SPIE Photonics West, 2015.
- C139 R. Amelard*, K. Pfisterer, D.A. Clausi, and A. Wong, "Non-contact hematoma damage and healing assessment using reflectance photoplethysmographic imaging", the proceedings of SPIE Photonics West, 2015.
- C140 F. Khalvati**, A. Wong, and M.A. Haider, "A Radiomics-based Approach for Prostate Cancer Detection via Incorporating Interpatient Variation in ADC Map", Proc. Canadian Cancer Research Conference, 2015.
- C141 E. Barshan, A. Wong, and P. Fieguth, "Scalable Multi-Neighborhood Learning for Convolutional Networks",

- the proceedings of IEEE International Workshop on Machine Learning for Signal Processing, 2015.
- C142 K. Fewster, M. Noguchi, C. Gooyers, A. Wong, and J. Callaghan, "Exploring the regional response of the intervertebral disc under postural varying loads", the proceedings of Annual Meeting of the American Society of Biomechanics, 2015.
- C143 M. Noguchi, A. Wong, I. Ben Daya*, T. Campbell, J. Quadrilatero, and J. Callaghan, "Quantifying microstructural damage accumulation in the annulus fibrosus during induced intervertebral disc herniation", the proceedings of Annual Meeting of the American Society of Biomechanics, 2015.
- C144 F. Li*, M. Shafiee*, A. Chung*, B. Chywl*, F. Kazemzadeh*, A. Wong, and J. Zelek, "High dynamic range map estimation via fully connected random fields with stochastic cliques", the proceedings of IEEE Conference on Image Processing, 2015.
- C145 A. Mishra, C. Scharfenberger**, P. Siva, F. Li*, A. Wong, and D. Clausi, "DESIRe: discontinuous energy seam carving for image retargeting via structural and textural energy functionals", the proceedings of IEEE Conference on Image Processing, 2015.
- C146 M. Shafiee*, A. Chung*, A. Wong, and P. Fieguth, "Improved fine structure modeling via guided stochastic clique formation in fully connected conditional random fields", the proceedings of IEEE Conference on Image Processing, 2015.
- C147 P. Siva, C. Scharfenberger**, I. Ben Daya*, A. Mishra, and A. Wong, "Return of Grid Seams: A Superpixel Algorithm Using Discontinuous Multi-functional Energy Seam Carving", the proceedings of IEEE Conference on Image Processing, 2015.
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- C274 A. Wong and W. Bishop, "Practical Perceptually Adaptive Approach to Video Logo Placement in TV Broadcasts", the proceedings of IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, 2007.
- C275 M. Hansen, A. Wong and W. Bishop, "A Hardware Implementation of Real-Time Video Deblocking Using Shifted Thresholding", the proceedings of IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, 2007.
- C276 A. Wong and W. Bishop, "Intelligent Multi-Level Regions-of-Interest (ROI) Document Image Encryption using an Online Learning Model", the proceedings of IASTED International Conference on Signal Processing, Pattern Recognition and Applications, Austria, 2007.
- C277 A. Wong and W. Bishop, "Adaptive Perceptual Degradation Based on Video Usage", the proceedings of IEEE International Symposium on Multimedia (IEEE ISM), San Diego, 2006.
- C278 A. Wong and W. Bishop, "Practical Content-Adaptive Subsampling for Image and Video Compression", the proceedings of IEEE International Symposium on Multimedia (IEEE ISM), San Diego, 2006.
- C279 A. Wong and W. Bishop, "Adaptive Normal Map Compression for 3D Video Games", the proceedings of FuturePlay, London, Ontario, Canada, 2006.
- C280 A. Wong and W. Bishop, "Efficient Deblocking of Block-Transform Compressed Images and Video Using Shifted Thresholding", the proceedings of the IASTED International Conference on Signal and Image Processing, Honolulu, Hawaii, 2006.
- C281 A. Wong and W. Bishop, "An Efficient, Parallel Multi-Key Encryption of Compressed Video Streams", the proceedings of the IASTED International Conference on Signal and Image Processing, Honolulu, Hawaii, 2006.
- C282 A. Wong and W. Bishop, "A Flexible Content-Based Approach to Adaptive Image Compression", the proceedings of the IEEE International Conference on Multimedia & Expo (IEEE ICME), Toronto, Ontario, Canada, 2006.
- C283 A. Wong and W. Bishop, "Expert Knowledge Based Automatic Regions-of-Interest (ROI) Selection in

- Scanned Documents for Digital Image Encryption”, the proceedings of the 3rd Conference on Computer and Robot Vision, Quebec City, Quebec, Canada, 2006.
- C284 A. Wong, W. Bishop and Jeff Orchard, “Efficient Multi-Modal Least-Squares Alignment of Medical Images Using Quasi-Orientation Maps”, the proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, Nevada, 2006.
- C285 A. Wong and Jeff Orchard, “Efficient and Robust Non-Rigid Least-Squares Rectification of Medical Images”, the proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, Nevada, 2006.
- C286 A. Munshi, A. Wong, A. Clinton, S. Braganza, W. Bishop, and M. McCool, “A Parameterizable SIMD Stream Processor”, the proceedings of the IEEE Canadian Conference on Electrical and Computer Engineering, Saskatoon, Saskatchewan, Canada, 2005.

Patents and Patent Applications (34)

- P1 X. Wang, A. Wong, “System and Method for Building and Using Learning Machines to Analyze and Understand Learning Machines, “ US Patent Application 62/724,566, 2018.
- P2 A. Wong, “System and Method for Decentralized Digital Structured Data Storage, Management, and Authentication using Blockchain”, US Patent Application 62/682,162, 2018.
- P3 I. Khodadad, A. Wong, and F. Kazemzadeh*, “Apparatus and Method for Subcutaneous Physiological Measurements”, US Patent Application 62/630,946, 2018.
- P4 F. Li*, M. Shafiee**, A. Wong, “System and Method for Automatic Building of Learning Machines using Learning Machines, “ US Patent Application 62/623,615, 2018.
- P5 I. Khodadad, A. Wong, and F. Kazemzadeh*, “Devices and Methods for Chemical Analysis of Substances, Analytes, and Assays”, US Patent Application 62/617,468, 2018.
- P6 S. Haider*, F. Kazemzadeh**, and A. Wong, “System, Method, and Apparatus for measuring polarization using spatially-varying polarization beams”, US Patent Application 62/615,067, 2018.
- P7 Y. Fu, I. Soreefan, A. Wong, M. Shafiee**, B. Chwyl*, and A. Chung*, “Bed exit monitoring system”, US Patent Application, 15/866,972, 2018.
- P8 A. Wong, Y. Fu, B. Chwyl*, A. Chung*, and M. Shafiee**, “Method and Apparatus for Automatic Event Prediction”, US Patent Application, 15/883,754, 2018.
- P9 A. Wong, Y. Fu, B. Chwyl*, A. Chung*, and M. Shafiee**, “Method and Apparatus for Automatic Event Prediction”, European Patent Application, 18154272.1, 2018.
- P10 A. Wong, Y. Fu, B. Chwyl*, A. Chung*, and M. Shafiee**, “Method and Apparatus for Automatic Event Prediction”, Japanese Patent Application, 2018-015348, 2018.
- P11 A. Wong, P. Fieguth, A. Ma*, A. Gawish, and M. Lamm, “Real-time Spatial-based Resolution Enhancement Using Shifted Superposition”, US Patent Application, 10/009,587, 2017. **currently being integrated into Christie Digital products)**
- P12 I. Khodadad, F. Kazemzadeh*, and A. Wong, “System and Method for Sequencing Biological Tissue and Determining the Physical State of a Subject”, US Patent Application 62/561,272, 2017.
- P13 E. Li*, H. Sekkati**, M. Lamm, and A. Wong, “ Device, System, and Method for Content-Adaptive Resolution-Enhancement”, European Patent Application 17178178.4 - 1902, 2017. **currently being integrated into Christie Digital products)**
- P14 E. Li*, H. Sekkati**, M. Lamm, and A. Wong, “ Device, System, and Method for Content-Adaptive Resolution-Enhancement”, US Patent 9,736,442, 2016. **currently being integrated into Christie Digital products)**
- P15 A. Wong and M. Shafiee*, “ System and Method for Building Artificial Neural Networks Using Data”, US Patent Application 62/529,474, 2017.
- P16 A. Wong and M. Shafiee*, “ System and Method for Building Artificial Neural Network Architectures”, US

- Patent Application 62/362,834, 2016.
- P17 A. Wong and M. Shafiee*, "System and Method for Building Artificial Neural Network Architectures", Canada Patent Application, 2016.
- P18 R. Amelard* and A. Wong, "System and Method for Spatial Cardiovascular Monitoring", US Patent Application 15/387,365, 2016.
- P19 R. Amelard* and A. Wong, "System and Method for Spatial Cardiovascular Monitoring", Canada Patent Application 2,952,485, 2016.
- P20 A. Wong and F. Kazemzadeh*, "A System, Method, and Apparatus for Improving the Spectral Resolution and Signal-to-Noise Ratio of Optical Spectrometer Using Digital Beam Refocusing, Reforming, Slicing, and Multiplexing", Canada Patent Application 2,937,230, 2016.
- P21 A. Wong and F. Kazemzadeh*, "A System, Method, and Apparatus for Improving the Spectral Resolution and Signal-to-Noise Ratio of Optical Spectrometer Using Digital Beam Refocusing, Reforming, Slicing, and Multiplexing", US Patent Application 15/219,933, 2016.
- P22 F. Kazemzadeh* and A. Wong, "A System, Method, and Apparatus for Ultra-resolved Ultra-wide Field-of-view Multispectral and Hyperspectral Holographic Microscopy", US Patent Application 14/963,662, 2015.
- P23 F. Kazemzadeh* and A. Wong, "A System, Method, and Apparatus for Ultra-resolved Ultra-wide Field-of-view Multispectral and Hyperspectral Holographic Microscopy", Canada Patent Application, 2015.
- P24 F. Kazemzadeh*, A. Wong, S. Haider*, "Imaging system and method for concurrent multiview multispectral polarimetric light-field high dynamic range imaging", US Patent Application 14/840,013, 2015.
- P25 F. Kazemzadeh*, A. Wong, S. Haider*, "Imaging system and method for concurrent multiview multispectral polarimetric light-field high dynamic range imaging", Canada Patent Application, 2015.
- P26 A. Wong, "A compensated magnetic resonance imaging system and method for improved magnetic resonance imaging and diffusion imaging quality", US Patent 9,709,651, August 20, 2014. **currently used by clinical scientists at Sunnybrook Health Sciences Centre)**
- P27 A. Wong, "Correlated Diffusion Imaging System and Method for Identification of Biological Tissue of Interest", United States Patent 9,619,882, June 19, 2014. **(currently used by clinical scientists at Sunnybrook Health Sciences Centre)**
- P28 A. Wong, "Correlated Diffusion Imaging System and Method for Identification of Biological Tissue of Interest", Canada Patent Application 2,854,844, June 19, 2014. **(currently used by clinical scientists at Sunnybrook Health Sciences Centre)**
- P29 A. Wong and H. Zhou, "Method and Apparatus for Generating a Panorama from a Sequence of Video Frames", filed through Seiko Epson Corp., United States Patent Application 20070030396, Feb 8, 2007. **(currently deployed worldwide in Epson products)**
- P30 A. Wong and H. Zhou, "Method and Apparatus for Automatic Image Categorization", filed through Seiko Epson Corp., United States Patent Application 20080089591, Apr 16, 2008. **(currently deployed worldwide in Epson products)**
- P31 A. Wong and H. Zhou, "Method and Apparatus for Automatic Image Categorization", filed through Seiko Epson Corp., European Patent Application EP1912161, Apr 16, 2008. **(currently deployed worldwide in Epson products)**
- P32 A. Wong and H. Zhou, "Method to Automatically Classify Input Image", filed through Seiko Epson Corp., Japanese Patent Application JP2008097607, Apr 16, 2008. **(currently deployed worldwide in Epson products)**
- P33 A. Wong and H. Zhou, "Method and Apparatus for Automatically Estimating the Layout of a Sequentially Ordered Series of Frames to Be Used to Form a Panorama", filed through Seiko Epson Corp., United States Patent 7474802, Jan 6, 2009. **(currently deployed worldwide in Epson products)**
- P34 A. Wong and H. Zhou, "Method and Apparatus for Estimating Shot Boundaries In A Digital Video Sequence", filed through Seiko Epson Corp., United States Patent 7551234, June 23, 2009. **(currently**

deployed worldwide in Epson products)

- P35 A. Wong and H. Zhou, "Method and Apparatus for Generating a Panorama Background from a Set of Images", filed through Seiko Epson Corp., United States Patent 7577314, August 18, 2009. **(currently deployed worldwide in Epson products)**

Books and Book Chapters (7)

- B1 F. Khalvati, Y. Zhang, A. Wong, and M. Haider, "Radiomics", Encyclopedia of Biomedical Engineering, Elsevier, 2018.
- B2 R. Amelard* and A. Wong, "Hemodynamic Imaging", Encyclopedia of Biomedical Engineering, Elsevier, 2018.
- B3 F. Kazemzadeh* and A. Wong, "Holographic Microscopy", Encyclopedia of Biomedical Engineering, Elsevier, 2018.
- B4 A. Wong and T. Nahm, "Intelligent Blockchain: The Intersection between Blockchain and AI", Proof of Stake: Blockchain Matters for Small and Medium Size Businesses, Miller Thomson, 2018.
- B5 A. Wong, J. Wallace, A. Lee, A. Kumar, V. Cheung, and X. Wang, Data Structures and Algorithms in a Nutshell: 5th Edition, University of Waterloo Publishing, 2016.
- B6 J. Glaister*, R. Amelard*, A. Wong, and D.A. Clausi, "Melanoma decision support using lighting-corrected intuitive feature models", Computer Vision Techniques for the Diagnosis of Skin Cancer, Springer, 2013.
- B7 A. Wong, A. Mishra, P. Fieguth, and D.A. Clausi, "Nonparametric Sample-based Methods for Image Understanding", Emerging Topics in Computer Vision (C.H. Chen (ed.)), World Scientific Publishing, 2011.

1.2 SELECTED INVITED PRESENTATIONS

- T1 Invited Talk, Human Machine Collaborative Design and Understanding for Scalable and Trustworthy Autonomy, Lyft, 2020.
- T2 Invited Talk, Generative Synthesis for Edge Deep Learning, Honeywell Tech Forum, 2020.
- T3 Invited Talk, Taking a Stance on Fake News: Towards Automatic Disinformation Assessment through AI and Explainability, Twitter, 2019.
- T4 Keynote Talk, A Hitchhiker's Guide to Practical AI in Medicine, University of Waterloo School of Pharmacy Reunion, 2019.
- T5 Invited Talk, A Hitchhiker's Guide to Usable, Scalable, Explainable, and Responsible AI, Communitech Corporate Innovation Summit, 2019.
- T6 Invited Talk, Operationalizing AI: Usable, Scalable, Explainable, Dependable, and Responsible, Waterloo Engineering Alumni Reunion, 2019.
- T7 Invited Talk, Towards Usable, Scalable, Explainable, Dependable, and Responsible AI, Waymo, 2019.
- T8 Invited Talk, Operational AI: Usable, Scalable, Explainable, and Responsible, Honeywell, 2019.
- T9 Invited Talk, Towards AI-powered Medical Imaging and AI, University of Bordeaux Delegation Colloquim, 2019.
- T10 Invited Talk, Scalable and Explainable Deep Learning in Practice, Airbus, 2019.
- T11 Invited Talk, A Hitchhiker's Guide to Practical Artificial Intelligence For Medicine, Waterloo MedTech 2018 Conference, Waterloo, 2018.
- T12 Invited Panelist, Champions of Industry, Waterloos Schulich Leaders Networking Event, 2018.
- T13 Invited Panelist, Driver Health Monitoring, 2018 AutoTech Symposium, 2018.
- T14 Invited Talk, Promises and Challenges of Operational AI, Alumni Lecture, Waterloo, 2018.
- T15 Invited Talk, Slaying the Scalability and Explainability Beasts in Deep Learning, LG, San Francisco, 2018.
- T16 Invited Talk, Slaying the Scalability and Explainability Beasts in Deep Learning, O'Reilly Artificial Intelligence Conference, San Francisco, 2018.

- T17 Invited Talk, Practical Deep Learning: Promises and Challenges, Inovia Capital / Obvious Venture Public Lecture, San Francisco, 2018.
- T18 Invited Talk, Enabling Scalable and Explainable Deep Learning in Medicine, National University of Singapore Workshop on Medical Imaging and Robotics, 2018.
- T19 Invited Talk, Evolutionary Synthesis of Deep Neural Networks, Continental Automotive, Lindau (broadcasted to Frankfurt/Budapest), 2018.
- T20 Invited Keynote Talk, A Hitchhiker's Guide to Machine Learning for Practical Applications, Toyota Innovation Awards, Waterloo, 2018.
- T21 Invited Talk, Slaying the Scalability and Explainability Beasts in Deep Learning, Google Developer Group Waterloo AI Meetup, Waterloo, 2018.
- T22 Invited Talk, Scalability and Explainability in Deep Learning, Google Developer Group Waterloo AI Meetup, Waterloo, 2018.
- T23 Invited Panelist, Collaborative Innovation: Bridging the Gap Between Healthcare and Tech, Waterloo-Wellington Clinical Research and Quality Improvement Symposium, 2018.
- T24 Invited Panelist, Beyond Impact: UWaterloos role in the innovation ecosystem, True North Conference, 2018.
- T25 Invited Talk, Tackling Scalability and Explainability Challenges for Deep Learning, Conference on Computer and Robotic Vision, 2018.
- T26 Invited Keynote Talk, Innovation at Waterloo Artificial Intelligence Institute, Microsoft AI Day, Toronto, 2018.
- T27 Invited Panelist, Artificial Intelligence and its Future, Golden Triangle Angel Network / AngelOne / SWO Angels meeting, April 2018.
- T28 Invited Talk, Artificial Intelligence at University of Waterloo, Innovate UK - Enterprise Europe Network: Canadian Embassy in London, UK, 2018.
- T29 Invited Talk, Artificial Intelligence and its impact, Waterloo Central Advancement Meeting, 2018.
- T30 Invited Panelist, Artificial Intelligence and the Road Ahead, Velocity, April 2018.
- T31 Invited Panelist, Turn Your Research Into a Startup, Beyond Impact: Waterloo Innovation Summit (Toronto), March 2018.
- T32 Invited Talk, Operational Artificial Intelligence for Precision Agriculture, SynBio cluster meeting, February 2018.
- T33 Invited Talk, Operational Artificial Intelligence for Anywhere, Anyone, Anytime, General Motors, January 2018.
- T34 Invited Talk, Operational Artificial Intelligence for Anywhere, Anyone, Anytime, Global CENTRA Talk (participants from 11 countries), December 2017.
- T35 Invited Talk, Toward Operational Artificial Intelligence: Anywhere, Anyone, Anytime, Canadian Special Operation Forces Command, December 2017.
- T36 Invited Talk, Enabling Operational Artificial Intelligence for Anyone, Anywhere, Anytime, Canadian Air Transport Security Authority, November 2017.
- T37 Invited Talk, Operational Artificial Intelligence in Supply Chain, Loblaws, November 2017.
- T38 Invited Talk, AnAcademicEntrepreneur'sJourneyBreakingintoHealthcareandtheChallengesAhead, 2017 Waterloo Region MedTech Conference, November 2017.
- T39 Invited Talk, Artificial Intelligence in Engineering, OIO Japan A.I. workshop, November 2017.
- T40 Invited Talk, Operational AI and the Potential for AVs, AutoTech Symposium 2017, October 2017.
- T41 Invited Keynote Talk, Operational Artificial Intelligence, The 19th CSI International Symposium on Artificial Intelligence and Signal Processing (AISP), October 2017.
- T42 Invited Talk, Toward Operational Artificial Intelligence: Anywhere, Anyplace, Anytime, Waterloo Reunion 2017, October 2017.
- T43 Invited Talk, Toward Operational Artificial Intelligence: Anywhere, Anyplace, Anytime, Volkswagen, August

2017.

- T44 Invited Talk, Artificial Intelligence-driven Data Analytics in Agriculture, Agrium, June 2017.
- T45 Invited Talk, Operational Artificial Intelligence in Finance, CIBC, June 2017.
- T46 Invited Talk, Toward Operational Deep Learning, Microsoft, June 2017.
- T47 Invited Talk, Toward Operational Artificial Intelligence: Anywhere, Anyplace, Anytime, Dayalbagh Educational Institute (DEI) Indo-Canadian Research Colloquium, June 2017.
- T48 Invited Talk, Vision-driven AI for Advanced Manufacturing, Siemens, May 2017.
- T49 Invited Talk, Research Entrepreneurship: From Vision to Reality, Alibaba, April 2017.
- T50 Invited Talk, Operational Artificial Intelligence in Automotive Sector, Continental, March 2017.
- T51 Invited Talk, Toward Operational Artificial Intelligence: Anywhere, Anyplace, Anytime, Up Close & Personal with SYDE, University of Waterloo, March 2017.
- T52 Invited Panelist, Big Ideas Panel Discussion on Tech North: Building Canadas First Technology Supercluster - Canadas Opportunity To Build Toronto-Waterloo In To One of the Worlds Top Technology Superclusters, Rotman School of Management, Toronto, January 2017.
- T53 Invited Talk, Operational Artificial Intelligence for Platform Intelligence, Umajin, January 2017.
- T54 Invited Talk, Evolutionary Synthesis of Operational Deep Intelligence, Nvidia, November 2016.
- T55 Invited Talk, Deep Learning with Darwin: Evolutionary Synthesis of Operational Deep Intelligence, Waterloo Institute for Complexity and Innovation, Waterloo, February 2017.
- T56 Invited Talk, AI for Factory of the Future, NRC, October 2016.
- T57 Invited Talk, Evolutionary Deep Intelligence, Miovision Technologies, October, 2016.
- T58 Invited Talk, Integrative Medical Imaging Systems, Waterloo Senate Meeting, February 2016.
- T59 Invited Talk, Grand Challenges in Computer Vision and Imaging, Department of Statistics and Actuarial Science, University of Waterloo, October 2015.
- T60 Invited Talk, Integrative systems for biomedical imaging and analysis, National Biotechnology Week, Waterloo, October, 2014.

Non-refereed Contributions (24)

- N1 T. Ravichandran, K. Gavahi, K. Ponnambalam, D. Kumar, A. Wong, J. Mousavi, V. Burtea, and K. Levin, Machine Learning Approach for Improved Water Pipe Leak Detection and Isolation for Sustainable Water Management. American Geophysical Union Fall Meeting, Washington, DC, December 10-14, 2018.
- N2 K. Fewster, M. Noguchi, C. Gooyers, A. Wong, and J. Callaghan, "Do structural changes in the anterior region of the intervertebral disc reflect those in the posterior-lateral region?", CRE-MSE Research Day, 2015. (Designed and implemented algorithm for data extraction used for the study)
- N3 S. Haider, A. Chung, E. Li, M. Shafiee, and A. Wong, Computational diffusion imaging modalities for prostate cancer, Abstract and Poster presentation. CIHR Team Grant and OICR Smarter Imaging Program (SIP) Prostate Workshop: Imaging Applications in Prostate Cancer, London, ON, November 21, 2014.
- N4 F. Li, M. Zhu, A. Wong, and D.A. Clausi, Depth sensing and reconstruction, Poster presentation. WelInnovate Symposium, Waterloo, ON, November 19, 2014.
- N5 B. Chywl, J. Deglint, A. Wong, and D.A. Clausi, Detecting Biomarkers Through Multispectral Data, Poster presentation. WelInnovate Symposium, Waterloo, ON, November 19, 2014.
- N6 A. Chung, E. Li, M. Shafiee, and A. Wong, Computer-Aided MRI Reconstruction and Analysis, Poster presentation. WelInnovate Symposium, Waterloo, ON, November 19, 2014.
- N7 S. Haider, F. Kazemzadeh, R. Amelard, and A. Wong, Integrative systems for biomedical imaging and analysis, Poster presentation. WelInnovate Symposium, Waterloo, ON, November 19, 2014.
- N8 A. Wong, Integrative systems for biomedical imaging and analysis, Oral presentation. National Biotechnology Week, Waterloo, ON, October 1, 2014.

- N9 A. Wong, D.A. Clausi, and P. Fieguth, Vision and image processing (VIP) research group, Poster presentation. Welnnovate, Waterloo, ON, November 14, 2014.
- N10 R. Amelard, A. Wong, and D.A. Clausi, Highly intuitive features for melanoma detection, Oral presentation. Graduate Student Research Conference, Waterloo, ON, April, 2013. **Won Best Oral Presentation Award.**
- N11 J. Glaister, A. Wong, and D.A. Clausi, Automatic illumination correction for dermatological photos, Oral presentation. Graduate Student Research Conference, Waterloo, ON, April, 2013.
- N12 A. Wong and D.A. Clausi, Intelligent clinical decision support system for melanoma cancer, Oral presentation. UW/OCE/Agfa Joint Workshop on Intelligent Clinical Decision Support System for Melanoma Cancer (Oral presentation), Waterloo, ON, June 7, 2012.
- N13 A. Wong, D.A. Clausi, and P. Fieguth, Vision and image processing (VIP) research group, Poster presentation. Welnnovate, Waterloo, ON, June 7, 2011.
- N14 N. Bandekar, A. Wong, D.A. Clausi, and M. Gorbet, A novel approach to automated cell counting for studying human corneal epithelial cells, Oral presentation. Graduate Student Research Conference, Waterloo, ON, April, 2011.
- N15 A. Wong, Stochastic multi-scale strategies for biomedical image analysis, Oral presentation. Graduate Student Research Conference, Waterloo, Ontario, Canada, Apr 2010. **Won Best Oral Presentation Award.**
- N16 A. Wong and D.A. Clausi, Image processing and computer vision algorithms for public surveillance, Oral presentation. Research Group Meeting, Geomatics for Informed Decisions (GEOIDE) an NSERC Network of Centres of Excellence (NCE), Vancouver, B.C., May 28-30, 2009.
- N17 A. Wong, W. Zhang, and D.A. Clausi, IceSynth: An image synthesis system for sea-ice segmentation evaluation, Oral presentation. Annual General Meeting of Geomatics for Informed Decisions (GEOIDE) an NSERC Network of Centres of Excellence (NCE), Vancouver, B.C., May 28-30, 2009.
- N18 A. Wong, Pre-processing/Filtering for Computer Vision, Oral presentation. CRV Tutorial Day 2009, Kelowna, BC, Canada, May 2009.
- N19 A. Wong, W. Zhang, and D.A. Clausi, IceSynth: An image synthesis system for sea-ice segmentation evaluation, Oral presentation. Vision and Image Processing (VIP) Workshop, University of Waterloo, Waterloo, ON, May 15, 2009.
- N20 A. Wong, D.A. Clausi, and P. Fieguth, Adaptive Monte Carlo Retinex method for illumination and reflectance separation and color image enhancement, Oral presentation. Vision and Image Processing (VIP) Workshop, University of Waterloo, Waterloo, ON, May 15, 2009.
- N21 W. Zhang, A. Wong, and D.A. Clausi, IceSynth: JEDI: Adaptive stochastic estimation for joint enhancement and despeckling of SAR images, Oral presentation. Vision and Image Processing (VIP) Workshop, University of Waterloo, Waterloo, ON, May 15, 2009.
- N22 A. Mishra, A. Wong, W. Zhang, P. Fieguth, and D.A. Clausi, Improved Interactive Medical Image Segmentation using Enhanced Intelligent Scissors (EIS), Poster presentation. Imagine Imaging Workshop on Biomedical Imaging Technologies, Waterloo, ON, 2008.
- N23 A. Wong, An Adaptive Non-local Means Approach to Exemplar-based Inpainting, Oral presentation. Graduate Student Research Conference, Waterloo, ON, Canada, April 2008.
- N24 A. Wong, Indirect Knowledge Based Approach to Non-Rigid Multi-Modal Registration of Medical Images, Oral presentation. Graduate Student Research Conference, Waterloo, ON, Canada, April 2007.
- N25 A. Wong, Efficient Multi-key Encryption of Compressed Video Streams, Poster presentation. Graduate Student Research Conference, Waterloo, ON, Canada, April 2006.

1.3 MEDIA COVERAGE

- M1 "Deep learning wont detect fake news, but it will give fact-checkers a boost," TechTalks, February 2020.
- M2 "Edge AI is the next step to ambient computing," Futurithmic Magazine, February 2020.

- M3 "Fake news detecting technology developed by DarwinAI," Kitchener Today, February 2020.
- M4 "DarwinAI Joins Fight Against Fake News," The Record, February 2020.
- M5 "Video Interview with Alexander Wong," ACM Interviews by Stephen Ibaraki, January 2020.
- M6 "Healthcare Algorithms Are Biased, and the Results Can Be Deadly," PC Magazine, January 2020.
- M7 "New AI Tool Helps Flag Fake News," The University Network News, December 2019.
- M8 "How the IoMT Will Evolve to Better Fit Healthcare Needs in 2020," HealthTech Magazine, December 2019.
- M9 "Deep-learning tool detects whoppers with 90 per cent accuracy," EIT Engineering and Technology, December 2019.
- M10 "New tool uses AI to flag fake news for media fact-checkers," ScienceDaily, December 2019.
- M11 "This artificial intelligence tool wont make you a fool," Free Press Journal, December 2019.
- M12 "DarwinAI is bringing artificial intelligence to new industries," Waterloo EDC, December 2019.
- M13 "What Does the Rise of AI Hold for Engineering Education?," EE Times, November 2019.
- M14 "Advances in technology and innovation are driving much-needed disruption in health care," Canadas Innovation Leaders 2019 Report, November 2019.
- M15 "University of Waterloo researchers use AI to help make advances in preventive health care," The Record, November 2019.
- M16 "Can AI Help Patients Take Control of Their Care?," HealthTech Magazine, October 2019.
- M17 "Researchers find ways to harness the power of AI," EduNews, October 2019.
- M18 "Researchers find way to harness AI creativity - dramatic performance boost to deep learning," SciTechNews, October 2019.
- M19 "New deep learning system design technique could boost edge image analysis," Biometric Update, October 2019.
- M20 "Collaborative robots' safety stalls enterprise implementation," TechTarget, September 2019.
- M21 "Audi partners with Waterloo company to deploy innovative AI," Waterloo EDC, September 2019.
- M22 "Audi, Waterloo firm work on driverless tech," Toronto Star, September 2019.
- M23 "Waterloo AI company works with Audi on driverless technology," The Record, September 2019.
- M24 "Waterloo researchers unearth gender and age biases in popular visual dataset," Waterloo News, August 2019.
- M25 "Is AI in your shops future?," Auto Service World, June 2019.
- M26 "Microsoft announces AI for Good funding for University of Waterloo," IT World Canada, June 2019.
- M27 "Robots + AI: Boring Is Beautiful," Forbes Magazine, May 2019.
- M28 "Q&A: University of Waterloo expert talks corporate opportunities in applied AI," Waterloo EDC, June 2019.
- M29 "Bedtime stories led to helping companies program for Alexa," Globe and Mail, April 2019.
- M30 "AttoNets: Compact and Efficient DNNs Realized via Human-Machine Collaborative Design," Synced Magazine, March 2019.
- M31 "Is AI Headed For Another Winter?," Forbes Magazine, March 2019.
- M32 "Artificial intelligence meets the real world," Manufacturing Automation Magazine, March 2019.
- M33 "Tools for generating deep neural networks with efficient network architectures," The O'Reilly Data Show, December 2018 (interview).
- M34 "Learning How AI Makes Decisions," PC Magazine, November 2018.
- M35 "Voice assistants only getting smarter as privacy concerns grow," The National, March 2018.
- M36 "DarwinAI Announces Explainability Platform for Neural Network Performance," insideBigData, November 2018.
- M37 "Engineering lab joins growing ethical AI partnership," Waterloo Engineering News, November 2018.
- M38 "Iranian student wins prestigious Alumni Gold Medal," Mehr News Agency, November 2018.

- M39 "Can a Canadian AI Startup Challenge Google in AutoML?," Synced News, October, 2018.
- M40 "Researchers develop offline speech recognition that's 97% accurate," VentureBeat, October, 2018.
- M41 "Automatic generation of efficient DNN, synthetic tool for edge devices, FermiNets," Synced / Baidu News, October, 2018.
- M42 "AI May be Monitoring Water Supplies Someday Soon," Environmental Monitor, 2018.
- M43 "DarwinAI Emerges from Stealth with Powerful Design, Optimization and Explainability Platform for Deep Learning", insideBigData, 2018.
- M44 "Canadian startup applies AI to deep neural networks to improve efficiency and transparency", Biometric Update, 2018.
- M45 "Waterloo startup DarwinAI aims to make AI smarter", Waterloo Record, 2018.
- M46 "DarwinAI raises \$3.9 million CAD to help devs design neural networks", BetaKit, 2018.
- M47 "DarwinAI out of stealth with \$3M seed funding led by Obvious Ventures and iNovia Capital", Private Capital Journal, 2018.
- M48 "DarwinAI emerges from stealth with \$3 mln in seed financing", PE Hub, 2018.
- M49 "DarwinAI raises \$3 million for AI that optimizes neural networks", VentureBeat, 2018.
- M50 "DarwinAI launches from stealth to automate artificial intelligence development", SiliconAngle, 2018.
- M51 "AI technology rapidly analyzes water samples", Engineer of the Future, August, 2018.
- M52 "Waterloo continues its involvement in Alexa Fellowship", Waterloo Engineering Stories, August, 2018.
- M53 "AquaHacking Alums Publish Algae Identifying AI Research", Water Canada, July, 2018.
- M54 "Better way found to determine the integrity of metals", Science Codex, July, 2018.
- M55 "AI seeks out imperfections in metals", Construction Canada, July, 2018.
- M56 "University of Waterloo researchers develop AI software to protect water supplies from toxins", BetaKit, July, 2018.
- M57 "Researchers develop AI tool better to determine the integrity of metals", Green Car Congress, July, 2018.
- M58 "How AI Could Protect Your Next Cup Of Water", The University Network, July, 2018.
- M59 "New AI technology will protect water supplies : Research", The Indian Wire, July, 2018.
- M60 "AI could protect public health by monitoring water treatment systems", Clinical Innovation and Technology, July, 2018.
- M61 "AI Software Developed to Detect Dangerous Algae, Protect Health", Asharq Al-Awsat News, July, 2018.
- M62 "AI Technology Could Improve Water Treatment Monitoring, Safeguard Public Health", Water and Waste Digest, July, 2018.
- M63 "New AI system could help protect water supplies", Devdiscourse, July, 2018.
- M64 "AI software to help protect water supplies", Software Testing News, July, 2018.
- M65 "Using AI Tech to Protect Water Supplies", IEEE Engineering 360, July, 2018.
- M66 "AI technology could help protect water supplies", Phys.org, July, 2018.
- M67 "How the Creative Destruction Lab helped transform DarwinAI from a fancy science project into a viable start-up", Creative Destruction Lab Blog, July, 2018.
- M68 "Non-invasive technology promises to reduce biopsies", Waterloo Engineering Alumni ELetter, June, 2018.
- M69 "New Institute for Applied AI Opens in Waterloo", Synced Magazine, June, 2018.
- M70 "Wearable Technology and AI Combine to Predict the Onset of Health Problems", Healthcare Analytics News, May, 2018.
- M71 "Waterloo Researchers Combine AI and "Smart Shirts" to Track Aerobic Health", Lab Manager Magazine, May, 2018.
- M72 "Smart clothing aims to predict failing health", Waterloo Stories, May, 2018.
- M73 "Nothing is impossible! University of Waterloo makes medical breakthrough. Alex Wong!", Golden

Horseshoe Chinese Press, April, 2018.

- M74 "Echologics: A Sound Solution to Leak Detection", SOWC Stories, April, 2018.
- M75 "UW unveils artificial intelligence lab", CTV News, April, 2018.
- M76 "UW launches Waterloo Artificial Intelligence Institute", The Record / Hamilton Spectator, April, 2018.
- M77 "Artificial intelligence research hub launched at University of Waterloo", CBC News, April, 2018.
- M78 "When will AI be a threat to human jobs?", Man vs. Machine Series, CTV News, April, 2018.
- M79 "What kind of tech-inspired future do you want?", Waterloo Stories, March, 2018.
- M80 "How artificial intelligence is helping doctors diagnose cancer," Beyond Limitations: 2017-2018 State of the University Report, University of Waterloo, 2018.
- M81 "Unleashing the power of AI in the world of finance", Engineering the Future, February, 2018.
- M82 "Breaking free of the internet with stand-alone AI", Engineering the Future, January, 2018.
- M83 "Engineering student and professor win best paper honours", Waterloo Media Release, January, 2018.
- M84 "DoD AI Spending, Lifelong Learning Machines, and Accountability", AI with AI: with Andy Ilachinski and David Broyles (Episode 7), December, 2017.
- M85 "How Diversity Will Help Toronto Win the AI Race", MaRS Magazine, December, 2017.
- M86 "The AI That Aims to Break Free From Wi-Fi Dependence", Healthcare Analytics News, December, 2017.
- M87 "Artificial intelligence may not need networks at all", Network World, December, 2017.
- M88 "Lifesavers: Diagnosis driven by artificial intelligence (AI)", CIHR Celebrating Health Research Storybook, November, 2017.
- M89 "Making artificial intelligence more private and portable", Digital Journal, November, 2017.
- M90 "New AI system can work without internet", The Economic Times, November, 2017.
- M91 "New AI system can break away from internet and cloud computing, provide privacy", The Indian Express, November, 2017.
- M92 "Tecnologia criada na Universidade de Waterloo promete liberar a IA da internet e da nuvem", iMasters, November, 2017.
- M93 "New Technology Makes Artificial Intelligence More Private and Portable", ACM TechNews, November, 2017.
- M94 "Making Artificial Intelligence compact", Live Mint News, November, 2017.
- M95 "University of Waterloo: Artificial Intelligence Without Internet Now Possible", The University Network News, November, 2017.
- M96 "New AI system can work without internet", The Hindu, November, 2017.
- M97 "New research in AI and cloud computing to make commuting smarter", Smart Computing for Innovation (SOSCIP) News, November, 2017.
- M98 "Novel Technology Enables AI to Function without Internet", Tech You n Me, November, 2017.
- M99 "New technology makes artificial intelligence more private and portable", ScienceDaily, November, 2017.
- M100 "Making artificial intelligence more private and portable", AAI AITopics, November, 2017.
- M101 "Internetloze AI Op Zakformaat", De Ingenieur Magazine, November, 2017.
- M102 "New technology makes artificial intelligence more private and portable", R & D Magazine, November, 2017.
- M103 "New technology could make AI work without internet, cloud", Sify Finance, November, 2017.
- M104 "New technology makes artificial intelligence more private and portable", Tech Xplore, November, 2017.
- M105 "New AI system can work without internet", Money Control, November, 2017.
- M106 "New Technology Could Make AI Work Without Internet, Cloud", News18, November, 2017.
- M107 "Erzwungene Evolution macht KI portabler", Wallstreet Online, November, 2017.
- M108 "Why its no longer strange to talk to your home appliances", Globe and Mail, October, 2017.
- M109 "Elucid Labs continues to garner attention as it brings its game-changing AI device to market", Waterloo

Chronicle, October, 2017.

- M110 "New software could make it easier to adopt and trust AI systems that set insurance premiums", Canadian Underwriter, October, 2017.
- M111 "Waterloo research paves the way for use of complex AI in the financial sector", Exchange Magazine, October, 2017.
- M112 "Building trust in AI", Investment Executive, October, 2017.
- M113 "Biotechnology and new biomarkers help diagnose multiple diseases", Sina, September, 2017.
- M114 "Inteligencia artificial ayuda a identificar cancer de piel precoz," LabMedica, September, 2017.
- M115 "Cutting-edge technology combining medical imaging and AI, AIDA aims to detect skin cancer in its infancy", HiTech Magazine, September, 2017.
- M116 "Novel AI imaging approach yields improved skin cancer diagnosis," Heallo Dermatology, September, 2017.
- M117 " University of Waterloo medical technology startup named to Canadian innovation list," Waterloo News, September, 2017.
- M118 "Medical technology startup named to innovation list," Waterloo Engineering News, September, 2017.
- M119 "New Artificial Intelligent Used for Early Melanoma Detection," TrendinTech Magazine, September, 2017.
- M120 "Employing Artificial Intelligence to Detect Skin Cancer Earlier," Specialty Pharmacy Times, September, 2017.
- M121 "AI Is Now Helping Doctors Diagnose Skin Cancer Faster," Huffington Post, August, 2017.
- M122 "Artificial intelligence helps with skin cancer detection," Digital Journal, August, 2017.
- M123 "New tech detects cancer early," Innovators Magazine, August, 2017.
- M124 "Artificial Intelligence May Help With Earlier Detection of Skin Cancer," The American Society of Clinical Oncology Post, August, 2017.
- M125 "Device can detect cancer," Waterloo Record, August, 2017.
- M126 "AI detects melanoma in earliest stages," Clinical Innovation and Technology Magazine, August, 2017.
- M127 "Canadians invent AI for early skin cancer screening," Digitimes Magazine Taiwan, August, 2017.
- M128 "AI can help skin cancer early diagnosis," BIOON, August, 2017.
- M129 "Une nouvelle technologie IA developpee pour detecter plus tot les cancers de la peau," ActulA, August, 2017.
- M130 "From dementia to skin cancer, artificial intelligence poised to change health care," DOTMed News, August, 2017.
- M131 "Skin Cancer News: Artificial intelligence helps with earlier detection of skin cancer," Youth Health Magazine, August, 2017.
- M132 "Doctors could soon use AI-based systems to detect skin cancers early," International Business Times UK, August, 2017.
- M133 "AI system to help detect skin cancer in early stages," The Tribune, August, 2017.
- M134 "Artificial Intelligence Used to Diagnose Alzheimer's Disease," MedIndia News, August, 2017.
- M135 "La Inteligencia Artificial podra detectar el cancer de piel antes que los medicos," TekCrispy Magazine, August, 2017.
- M136 "Artificial intelligence to help detect early stage skin cancer," The Stack, August, 2017.
- M137 "AI Technology is the Next Step in Fast Cancer Detection," IEEE Engineering360, August, 2017.
- M138 "Artificial intelligence helps with earlier detection of skin cancer," ScienceDaily, August, 2017.
- M139 "Artificial Intelligence Imaging Research Facilitates Disease Diagnosis," Clinical Lab Products Magazine, July, 2017.
- M140 "From gaming to autonomous cars, NVIDIA shapes a fantastical future," Invest Ontario Success Story, July, 2017. (showcased evolutionary deep learning technology from my research group)

- M141 "AI With A Difference," WEAL Magazine, July, 2017.
- M142 "How Figure 1, The 'Instagram For Doctors' App, Plans To Introduce AI," Fast Company, June, 2017.
- M143 "Figure 1 se lanza a la Inteligencia Artificial," Milenio, June, 2017.
- M144 "Canadian Researchers Develop Low-Cost, Lens-Free Light-Field Microscope; Could Make Anatomic Pathology Labs Portable and More Affordable," Dark Daily, June, 2017.
- M145 "Reading the minds of deep learning AI systems," Waterloo Stories, June, 2017.
- M146 "AI-powered microscope has no lens yet sees nanoparticles for pathologists," Health Imaging, June, 2017.
- M147 "Lens-free microscope enables full-colour pathology at low cost," The Engineer, June, 2017.
- M148 "Artificial intelligence imaging research makes diagnosing disease easier," Technology Networks Magazine, June, 2017.
- M149 "Artificial intelligence imaging research makes diagnosing disease easier," Lab Manager Magazine, June, 2017.
- M150 "Artificial intelligence imaging research makes diagnosing disease easier," Exchange Magazine, June, 2017.
- M151 "Artificial intelligence imaging research makes diagnosing disease easier," University of Waterloo Media Release, June, 2017.
- M152 "Taking on Lake Eries Algae Monster: A look inside AquaHacking 2017," Water Institute News, June, 2017.
- M153 "Which countries and universities are leading on AI research?" Times Higher Education, May, 2017.
- M154 "How tech firms are racing to perfect conversational artificial intelligence," Canadian Business, May, 2017.
- M155 "The Great Equalizer," Maclean's Magazine, May, 2017.
- M156 "Seven wonders that will change your world," Waterloo Magazine, May, 2017.
- M157 "Group wins award at hockey analytics conference," Waterloo Engineering Media Release, May, 2017.
- M158 "Brain Drain North," Financial Post, March 27, 2017.
- M159 "Artificial intelligence and the Waterloo-Toronto tech supercluster," Waterloo Stories, January 28, 2017.
- M160 "Researchers edge out leading institutions to win AI award," Waterloo Engineering Research Media Release, December 16, 2016.
- M161 "University of Waterloo Engineering Rated Number One by Macleans' Magazine," SpokeTV News, November, 2016.
- M162 "The Best of the Physics arXiv (week ending June 25, 2016)," MIT Technology Review, June, 2016. (showcasing evolutionary deep intelligence)
- M163 "Cancer detection technology at University of Waterloo," The Morning Edition with Craig Norris, CBC Radio One, May, 2016.
- M164 "Prostate, lung cancer ID filter created at University of Waterloo," CBC News, May, 2016.
- M165 "Breakthrough tech helps doctors more accurately diagnose cancer," Waterloo Stories, May, 2016.
- M166 "Coded Hemodynamic Imaging," Focus Cantonese OMNI Television, May 4, 2016.
- M167 "Coded Hemodynamic Imaging," Focus Mandarin OMNI Television, May 4, 2016.
- M168 "Researchers honoured for advances in identifying cancer through imaging," Waterloo Engineering Research Media Release, March 31, 2016.
- M169 "It takes a village," Lab Business, January/February, 2016. (showcased CHI technology)
- M170 ""Selfie" under the skin: Mini camera tracking blood flow," Sina, February, 2016.
- M171 "Invent This Week: Day 3," Daily Planet (TV show on Discovery Channel), February, 2016. (showcased CHI technology)
- M172 "The selfie that really DOES get under your skin: Camera can track blood flow and show it pulsing through the body," Daily Mail, January, 2016.
- M173 "Imaging technology can spot heart problems at a glance," The Spectator, January, 2016.
- M174 "Single Blood Pulse Reading Meets its Waterloo," Intellectual Capitals, January, 2016.

- M175 "Touchless UW device monitors blood flow to look for abnormalities," The Waterloo Region Record, January, 2016.
- M176 "Whole-body imaging technology uses contactless tracking of blood flow," Gizmag Magazine, January, 2016.
- M177 "Canadian scientists invent portable device that can see blood flow in your veins to detect disease," International Business Times, January, 2016.
- M178 "Non-contact imaging device for monitoring blood flow," The Engineer, January, 2016.
- M179 "Now a body imaging device can help detect heart problems early," Deccan Chronicle, January, 2016.
- M180 "Touchless device can provide whole body blood flow monitoring," United Press International, January, 2016.
- M181 "New touchless device to better detect heart problems," Yahoo News!, January, 2016.
- M182 "New touchless device to detect heart problems early," Business Standard, January, 2016.
- M183 "Coded Hemodynamic Imaging: Dieses System macht den menschlichen Blutfluss sichtbar," Trends Der Zukunft, January, 2016.
- M184 "Se puede predecir un ataque al corazon? Ese es el objetivo de este revolucionario dispositivo virtual," Prnoticias, January, 2016.
- M185 "Un systeme permet de monitorer le rythme cardiaque sans contact," Pourquoi Docteur, January, 2016.
- M186 "UW researchers out with new touchless device to prevent heart issues," 570 News, January, 2016.
- M187 "New touchless device makes earlier detection of heart problems possible," University of Waterloo Media Release, January, 2016.
- M188 "News in Artificial Intelligence and Machine Learning with Nathan Benaich", Medium, Nov 2015. (showcased discovery radiomics)
- M189 "Industry partnership leads to Distinguished Paper Award," Waterloo Engineering Research Media Release, June 8, 2015.
- M190 "No more sore fingers: hand-held device could make blood sugar testing less painful," Educating the Engineering of The Future, April, 2015.
- M191 "An exceptional EYE-dea," Waterloo Life Blog, March, 2015.
- M192 "Recognized excellence," Defining Tomorrow: 2014-2015 State of the University Report, University of Waterloo, 2015.
- M193 "Waterloo device could take the pain out of diabetics blood tests," Waterloo Stories, Feb, 2015.
- M194 "Grad student honoured for easier blood glucose testing," Eng-e-News, vol. 11, no. 10, Nov, 2014.
- M195 "Research Excellence Endorsed," WEAL Magazine, no. 60, Sept, 2014.
- M196 "Health Warriors: How researchers at the University of Waterloo are improving - and saving - lives," University of Waterloo Magazine, Spring 2014.
- M197 "Malaysia Airlines MH370: The challenges of a remote ocean search," CBC News, Mar 20, 2014 (provided expert opinion).
- M198 "Four University of Waterloo engineering professors named Canada Research Chairs," University of Waterloo Media Release, March 28, 2014.
- M199 "Making it harder for cancer to hide," Waterloo Stories, Jan, 2013.
- M200 "Improving Early Diagnosis to Save Lives," Centre for Bioengineering and Biotechnology Media Release, Jan, 2013.
- M201 "Taking Aim at Cancer," WEAL Magazine, no. 58, Sept, 2012.
- M202 "Cancer Screening Gets a Boost," Eng-e-News, vol. 9, no. 5, May 9, 2012.
- M203 "11 local researchers win provincial awards," The Waterloo Region Record, May 4, 2012.
- M204 "Our next generation of researchers gets a strong leg up from the province," Waterloo Engineering Research Media Release, May 4, 2012.
- M205 "Eight University of Waterloo researchers receive prestigious research grants," University of Waterloo Media Release, May 4, 2012.

M206 "A Golden Future," University of Waterloo Engineering Annual Report, 2011.

1.4 RESEARCH FUNDING

Total Funding: \$9,139,456 in cash, \$1,197,653 in-kind

1.5 AWARDS

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| IMPACT 50 <i>insideBIGDATA</i> <i>Awarded as Co-founder of DarwinAI for being one of industries top 50 most impactful companies</i> | Jan 2020 |
| Game Changers 2020 <i>CB Insights</i> <i>Awarded as Co-founder of DarwinAI for being one of 36 startups that could change the world</i> | Jan 2020 |
| Toronto's Best Tech Startup Award <i>Tech in Motion Awards</i> <i>Awarded as Co-founder of DarwinAI</i> | Oct 2019 |
| Best AI Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Nov 2019 |
| Best Vision Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Nov 2019 |
| IMPACT 50 <i>insideBIGDATA</i> <i>Awarded as Co-founder of DarwinAI for being one of industries top 50 most impactful companies</i> | Sept 2019 |
| Cool Vendor in Enterprise AI Governance and Ethical Response <i>Gartner</i> <i>Awarded as Co-founder of DarwinAI</i> | Oct 2019 |
| Canada Research Chair Tier II <i>Natural Sciences and Engineering Research Council of Canada, Canada</i> <i>Awarded for demonstrated excellence and academic contributions to artificial intelligence and medical imaging</i> | 2018-2023 |
| Top 10 Best Paper Recognition (2) <i>International Conference on Image Analysis and Recognition (ICIAR), Canada</i> | Aug 2019 |
| Fourth Prize Poster Award <i>IEEE-RAS-EMBS International Conference on Rehabilitation Robotics (ICORR), Canada</i> | Feb 2019 |
| First Prize <i>Velocity Graduate Student Fund</i> <i>Awarded as Co-founder of Blue Lion Labs</i> | Jan 2019 |
| IMPACT 50 <i>insideBIGDATA</i> <i>Awarded as Co-founder of DarwinAI for being one of industries top 50 most impactful companies</i> | Jan 2019 |
| AI Leader of the Year (Nominated) <i>4th Annual Canadian FinTech & AI Awards</i> | Nov 2018 |
| Top Ten Startups Award <i>AutoMobility LA</i> <i>Awarded as Co-founder of DarwinAI</i> | Nov 2018 |

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| Toronto's Best Tech Startup Award (Runner-up) <i>Tech in Motion Awards</i> <i>Awarded as Co-founder of DarwinAI</i> | Oct 2018 |
| People's Choice Award <i>Elevate Festival ElevateR Competition, Canada</i> <i>Awarded as Co-founder of Elucid Labs</i> | Sept 2018 |
| Best Overall Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Nov 2018 |
| Best Vision Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Nov 2018 |
| Outstanding Performance Award <i>University of Waterloo, Canada</i> | 2018 |
| Best Paper Award <i>NIPS Workshop on Transparent and Interpretable Machine Learning, USA</i> | Dec 2017 |
| Millennium Technology Prize (nominated) <i>Technology Academy Finland, Finland</i> | 2018 |
| E.W.R Steacie Memorial Fellowship (nominated) <i>Natural Sciences and Engineering Research Council of Canada, Canada</i> | 2017 |
| Best Vision Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Oct 2017 |
| Best Vision Paper Award (2nd place) <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Oct 2017 |
| Best Imaging Paper Award (2nd place) <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Oct 2017 |
| AquaHacking 2017 Challenge First Place Award (Cash prize) <i>de Gasp Beaubien Foundation, Canada</i> | Sept 2017 |
| CIX Top 20 Award <i>Canadian Innovation Exchange, Canada</i> <i>Awarded as Co-founder of Elucid Labs</i> | Sept 2017 |
| Best Student Paper Award <i>Ottawa Hockey Analytics Conference, Ottawa</i> | May 2017 |
| Young Engineer Award (nominated) <i>Professional Engineers Ontario (PEO), Canada</i> | 2016,2017 |
| Best Student Paper Award <i>Ottawa Hockey Analytics Conference, Ottawa</i> | May 2017 |
| Newport Research Excellence Award <i>SPIE Photonics West, San Francisco</i> | Jan 2017 |
| Best Paper Award <i>NIPS Workshop on Efficient Methods for Deep Neural Networks, Spain</i> | Dec 2016 |

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| Synaptive Best Medical Imaging Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Oct 2016 |
| Distinguished Performance Award <i>University of Waterloo, Canada</i> | 2016 |
| Magna Cum Laude Paper Awards (2) <i>Annual Meeting of the Imaging Network of Ontario, Canada</i> <i>Awarded two Magna Cum Laude Paper Awards for papers on radiomics-driven clinical decision support</i> | March 2016 |
| Cum Laude Paper Award <i>Annual Meeting of the Imaging Network of Ontario, Canada</i> <i>Awarded a Cum Laude Paper Award for paper on lung cancer analysis</i> | March 2016 |
| Sandford Fleming Teaching Excellence Award <i>Sandford Fleming Foundation, Canada</i> | 2015 |
| Outstanding Performance Award <i>University of Waterloo, Canada</i> | 2015 |
| Best Paper Award <i>Conference on Vision and Imaging Systems (CVIS), Canada</i> | Oct 2015 |
| Distinguished Paper Award <i>Conference of Society of Information Display</i> | June 2015 |
| Steacie Prize for Natural Sciences (Nominated) <i>E.W.R. Steacie Memorial Fund, Canada</i> | 2015, 2016 |
| Norman Edmund Inspiration Award <i>Edmund Optics, USA</i> with Shahid Haider <i>Awarded for research that inspires others on a daily basis, especially children, to pursue careers in science and technology by developing new devices to advance medical sciences and cure any illnesses that they may face in their lifetimes</i> | Nov 2014 |
| Canada Research Chair Tier II <i>Natural Sciences and Engineering Research Council of Canada, Canada</i> <i>Awarded for demonstrated excellence and academic contributions to medical imaging systems</i> | 2013-2018 |
| Early Researcher Award <i>Ministry of Research and Innovation, Canada</i> <i>Awarded for demonstrated excellence and academic contributions in computer-aided prostate diagnosis using multi-parametric MRI imaging</i> | 2012-2017 |
| CIPPRS Best Paper Award <i>Conference on Computer and Robot Vision (CRV), Canada</i> | May 2014 |

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| Engineering Faculty Research Award <i>University of Waterloo, Canada</i> <i>Awarded for outstanding achievement, commitment to research excellence, and the advancement of innovation in the field of biomedical image processing and analysis</i> | 2012 |
| Outstanding Performance Award <i>University of Waterloo, Canada</i> | 2012 |
| Microsoft Research Faculty Fellowship (Nominated) <i>Microsoft Corp., USA</i> | 2013, 2012 |
| NSERC Postdoctoral Fellowship <i>Natural Sciences and Engineering Research Council of Canada, Canada</i> | 2010-2012 |
| Alumni Gold Medal (Top Ranking Doctoral Graduate) <i>University of Waterloo, Canada</i> | Oct 2010 |
| Best Oral Presentation Award <i>University of Waterloo Graduate Research Conference, Canada</i> | Apr 2010 |
| Carl A. Pollock Postgraduate Fellowship <i>University of Waterloo, Canada</i> | 2009-2010 |
| CIPPRS Best Paper Award <i>Conference on Computer and Robot Vision (CRV), Canada</i> | May 2009 |
| Annual Conference Travel Grant <i>GEOIDE (GEOmatics for Informed DEcisions) Network, Canada</i> | May 2009 |
| NSERC Doctoral Postgraduate Scholarship <i>Natural Sciences and Engineering Research Council of Canada, Canada</i> | 2007-2009 |
| President's Graduate Scholarship <i>University of Waterloo, Canada</i> | 2007-2009 |
| NSERC Industrial Postgraduate Scholarship <i>Natural Sciences and Engineering Research Council of Canada, Canada</i> | 2005-2007 |
| Faculty of Engineering Graduate Scholarship <i>University of Waterloo, Canada</i> | Jan-Apr 2007 |
| University of Waterloo Graduate Scholarship <i>University of Waterloo, Canada</i> | May-Aug/Sept-Dec 2006, Jan-Apr 2010 |
| Governor General's Bronze Medal (Top Rank in Graduating Class) <i>Mary Ward C.S.S., Canada</i> | May 2000 |

2 SERVICE

2.1 COMMITTEES

- Member of the Artificial Intelligence undergraduate program committee at University of Waterloo (2017-Present)
- Member of the Artificial Intelligence Institute committee at University of Waterloo (2016-Present)
- Member of the Biomedical Engineering undergraduate committee at University of Waterloo (2014-Present)
- Member of the Biomedical Engineering program committee at University of Waterloo (2011-2014), Role: Participated in Curriculum Design

2.2 OTHER UNIVERSITY SERVICE

- Pure Management Committee Representative for Faculty of Engineering, September 2016 - Present.
- Founding Member of the Waterloo Artificial Intelligence Institute committee at University of Waterloo (2016-Present)
- Member of the Waterloo Artificial Intelligence Institute steering committee at University of Waterloo (2018-Present)
- Member of the Artificial Intelligence Engineering undergraduate option committee at University of Waterloo (2017-Present)
- Member of the Masters in Artificial Intelligence graduate curriculum development committee at University of Waterloo (2017-Present)
- Member of the Biomedical Engineering undergraduate committee at University of Waterloo (2014-Present)
- Member of the Biomedical Engineering program development committee at University of Waterloo (2011-2014)
- Waterloo Advisory Committee Member, CANARIE Joint Security Project (2017-Present)
- Member of the Systems Design Engineering Chair search committee at University of Waterloo (2017-Present)
- Engineering Computing Committee Representative for Department of Systems Design Engineering, May 2015 - Present.
- Computer Engineering Option Coordinator for Department of Systems Design Engineering, January 2015 - Present.
- Volunteer judge for the Programming Engineering Competition at the Waterloo Engineering Competition, Fall 2014
- Faculty mentor for the IEEE Signal Processing Cup 2014 University of Waterloo team
- Volunteer for You @ Waterloo Day, Spring 2014/2015
- Volunteer judge for the SYDE third-year design symposium, Winter 2014
- Volunteer judge for the MME capstone design symposium, Winter 2013

- Volunteer faculty mentor for ExpecTAtions, Fall 2013
- Volunteer for Congress 2013 Career Fair, Winter 2013
- Volunteer for Campus Day, Winter 2012
- Volunteer for Engineering Graduate Studies Info Reception, Fall 2012
- Volunteer for WelInnovate, Fall 2011/2012
- Academic Sponsor of UW FIRST Lego League, 2012-Present
- Volunteer organizer for Kitchener-Waterloo Robotic Vision School Outreach program (in affiliation with Kitchener-Waterloo Vision and Imaging Society (KW-VIS), 2015-Present
- Guest lecturer on Connectionism Perspective on the Human Vision System to high school students for Waterloo Unlimited, Fall 2016.
- Guest lecturer on Grand Challenges in Computer Vision and Imaging to Department of Statistics and Actuarial Science, Fall 2015.
- Guest lecturer on Integrative Medical Imaging Systems to 1A students during their class professor hours, Fall 2014.
- Guest lecturer to CS 793 (Health Informatics) on Multiparametric strategies for medical image analysis, Winter 2012/2013
- Guest lecturer on Systems Design Engineering: Intelligent Systems Theme Area to 3B students during their class professor hours, Winter 2014.
- Guest lecturer on Systems Design Engineering: Intelligent Systems to 2B students during their class professor hours, Fall 2011/2012.
- Guest lecturer on Engaging in research at University of Waterloo to 1B students during their class professor hours, 2011.
- Guest lecturer to SYDE 384 (Biological and Human Systems) on Biomedical image processing and analysis, 2011.
- Guest lecturer on Biomedical imaging research at University of Waterloo to 1B students during their class professor hours, 2018.

3 PROFESSIONAL ACTIVITIES

3.1 SOCIETY MEMBERSHIPS

- **Professional Engineer**, Professional Engineers of Ontario (PEO) (2010-Present) [with Certificate of Authorization]
- The College of New Scholars, Artists and Scientists, Royal Society of Canada (Member) (2018-Present)
- Institute of Electrical and Electronics Engineers (IEEE) (Senior Member) (2005-Present)
 - Voting member on IEEE Communication Society Multimedia Communications Technical Committee
 - Member on IEEE Computer Society Technical Committee on Pattern Analysis and Machine Intelligence
 - Member on IEEE Computer Society Technical Committee on Multimedia Computing
- Member of Partnership on AI (2018-Present)
 - Member on ABOUT ML (Annotation and Benchmarking on Understanding and Transparency of Machine learning Lifecycles) Steering Committee
- Member of Canadian Nutrition Society (2019-Present)
- Association for Computing Machinery (ACM) (2005-Present)
- Kitchener-Waterloo Vision and Imaging Society (KW-VIS) (**Founding Co-President**)(2013-Present)
- Canadian Game Studies Association (CGSA) (2007-Present)
- Canadian Image Processing and Pattern Recognition Society (CIPPRS) (2010-Present)
- Waterloo Artificial Intelligence Institute (**Founding Member and Steering Committee Member**)(2016-Present)
- Centre for Bioengineering and Biotechnology (2012-Present)
- Water Institute (2015-Present)

3.2 EDITORIAL POSITIONS

- Section Editor, BMC Medical Imaging, Springer. (2015-Present)
- Section Editor, Encyclopedia of Biomedical Engineering, Elsevier. (2016-Present)
- Co-Editor-in-Chief, Journal of Computational Vision and Imaging Systems (2015-Present)
- Associate Editor, Sensors Journal. (2019-Present)
- Associate Editor, Electronic Letters. (2019-Present)
- Associate Editor, IEEE Canadian Journal of Electrical and Computer Engineering. (2013-Present)
- Guest co-editor, Sensors Journal, Special Issue on Biomedical Imaging and Sensing, MDPI. (2018-Present)
- Associate Editor, BMC Medical Imaging, Springer. (2013-2015)

- Editorial board member, International Scholarly Research Notices. (2014-Present)
- Editorial board member, ISRN Biomedical Imaging. (2012-2014)
- Editorial board member, ISRN Signal Processing. (2010-2014)
- Editorial board member, Journal of the Canadian Game Studies Association. (2008-Present)

3.3 CONFERENCE ORGANIZATION

- Conference co-chair, Annual Conference on Vision and Imaging Systems (CVIS 2015, 2016, 2017, 2018, 2019)
- Technical program committee member, BMVC Workshop on Visual Artificial Intelligence and Entrepreneurship, 2019.
- Co-chair, Special Session on Medical Imaging and Analysis Using Deep Learning and Machine Intelligence at International Conference on Image Analysis and Recognition (ICIAR) (2019)
- Co-chair, Special Session on Deep Learning on the Edge at International Conference on Image Analysis and Recognition (ICIAR) (2019)
- Technical program committee member, CVPR International Workshop on Computer Vision for Physiological Measurement (CVPM 2018)
- Co-chair, Workshop on Machine Learning for Medical Care at International Conference on Image Analysis and Recognition (ICIAR) (2017)
- Co-chair, BIRC Workshop on Deep Learning in Medicine (2017)
- Scientific committee member, International Conference on Inverse Problems in Engineering (ICIPE 2017)
- Technical program committee member, The 19th CSI International Symposium on Artificial Intelligence and Signal Processing (AISP 2017)
- Technical program committee member, International Conference on Image Analysis and Recognition (ICIAR 2017,2018)
- Session chair, International Conference on Inverse Problems in Engineering (ICIPE 2017)
- Technical program committee member, International Conference on Single Processing and Data Mining (ICSPDM 2015)
- Technical program committee member, International Symposium on Computer Vision and the Internet (VisionNet 2015)
- Technical program committee member, International Conference on Computer Vision and Image Analysis (ICCVIA 2015)
- Technical program committee member, International Conference on Computer Applications and Aided Diagnosis (ICCAAD 2014)
- Technical program committee member, Conference on Computer and Robot Vision (CRV 2012, 2013, 2014, 2015, 2016, 2017, 2018)
- Technical program committee member, International Conference on Electronic & Mechanical Engineering and Information Technology, 2011
- Technical program committee member, The 3rd International Conference on Internet Technology and Applications (iTAP 2012)

3.4 REVIEWER

- I serve as a reviewer for the following grants:
 - NSERC Discovery Grants.
 - Canada Research Chair Grants.
 - Fonds de recherche Nature et technologies Etablissement de nouveaux chercheurs universitaires.
 - Swiss National Science Foundation Croatian-Swiss Research Programme.
 - Hong Kong Innovation and Technology Commission Research Grants.
 - NSERC Collaborative Research and Development Grants.
 - MITACS Accelerate Program.
- I review five papers per month on average and have served as a reviewer for the following research journals, conferences, and books:
 - IEEE Transactions on Medical Imaging.
 - IEEE Transactions on Image Processing.
 - IEEE Transactions on Biomedical Engineering.
 - IEEE Journal of Biomedical and Health Informatics.
 - IEEE Journal on Selected Areas in Communications.
 - IEEE Journal of Selected Topics in Earth Observations and Remote Sensing.
 - IEEE Transactions on Geoscience and Remote Sensing.
 - IEEE Signal Processing Letters.
 - IEEE Geoscience and Remote Sensing Letters.
 - IEEE Canadian Journal of Electrical and Computer Engineering
 - Nature Scientific Reports, Nature Publishing Group.
 - Optics Express, Optical Society of America.
 - Optics Engineering, Society of Photo-Optical Instrumentation Engineers (SPIE).
 - Journal of the Optical Society of America A, Optical Society of America.
 - Pattern Recognition Letters, Elsevier.
 - Signal Processing: Image Communication, Elsevier.
 - Signal Processing, Elsevier.
 - Journal of Visual Communication and Image Representation, Elsevier.
 - Biomedical Signal Processing and Control, Elsevier.
 - Computer and Geoscience, Elsevier.
 - Information Fusion, Elsevier.
 - Journal of the Franklin Institute, Elsevier.
 - BMC Medical Imaging, Springer.
 - Machine Vision and Applications, Springer.
 - Signal, Image and Video Processing Journal, Springer.
 - Journal of Signal Processing Systems, Springer.
 - Journal of Electrical and Computer Engineering.

- Journal of Ophthalmology.
- EURASIP Journal on Image and Video Processing.
- ISRN Signal Processing.
- Advances in Multimedia.
- Current Medical Imaging Reviews, Bentham Science.
- Journal of Spectral Imaging.
- An Introductory Guide to the Emerging Areas of Digital Image Processing (book), IConcept Press Ltd.
- Multivariate Statistical Modeling in Engineering and Management (book), CRC Press.
- International Journal of Image and Graphics, World Scientific.
- International Journal of Pattern Recognition and Artificial Intelligence, World Scientific.
- Remote Sensing, Molecular Diversity Preservation International (MDPI).
- International Journal of Open Problems in Computer Science and Mathematics.
- International Journal of Optomechatronics, Taylor and Francis.
- Journal of Canadian Game Studies Association.
- British Machine Vision Conference (BMVC), 2015, 2016, 2017.
- IEEE International Symposium on Geoscience and Remote Sensing (IEEE IGARSS), 2009, 2010.
- IEEE International Conference on Image Processing (IEEE ICIP), 2008, 2011.
- IEEE International Conference on Semantic Computing (IEEE ICSC), 2008.
- International Symposium on Visual Computing, 2011.
- IEEE Canadian Conference on Electrical and Computer Engineering (IEEE CCECE), 2008, 2011.
- The Annual Conference of the IEEE Industrial Electronics Society (IEEE IECON), 2008, 2018, 2019.
- International Symposium on Computer Vision and the Internet (VisionNet), 2015.