Alexander Wong
Canadian Citizen
Department of Systems Design Engineering
University of Waterloo, Waterloo, Canada N2L 3G1
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EDUCATION

University of Waterloo, Waterloo, ON, Canada 2007-Present
Ph.D. in Systems Design Engineering
Thesis: "Multimodal image registration using probabilistic complex phase representations"

University of Waterloo, Waterloo, ON, Canada 2005-2007
M.A.Sc. in Electrical and Computer Engineering
Thesis: "Low Cost Visual/Inertial Hybrid Motion Capture System for Wireless 3D Controllers"

University of Waterloo, Waterloo, ON, Canada 2000-2005
B.A.Sc. Honours in Computer Engineering

Mary Ward C.S.S., Toronto, ON, Canada 1996-2000
First in Graduating Class

AWARDS

Carl A. Pollock Postgraduate Fellowship 2009-2010
University of Waterloo, Canada

NSERC Doctoral Postgraduate Scholarship 2007-2009
Natural Sciences and Engineering Research, Canada

President's Graduate Scholarship 2007-2009
University of Waterloo, Canada

CIPPRS Best Paper Award May 2009
Canadian Conference on Computer and Robot Vision (CRV), Canada

Best Oral Presentation Award Apr 2010
University of Waterloo Graduate Research Conference, Canada

Annual Conference Travel Grant May 2009
GEOIDE (GEOmatics for Informed DEcisions) Network, Canada

NSERC Industrial Postgraduate Scholarship 2005-2007
Natural Sciences and Engineering Research, Canada

Faculty of Engineering Graduate Scholarship Jan-April 2007
University of Waterloo, Canada

University of Waterloo Graduate Scholarship May-Aug 2006, Sept-Dec 2006, Jan-Apr 2010
University of Waterloo, Canada

Governor General's Bronze Medal (Top Rank in Graduating Class) May 2000
Mary Ward C.S.S., Canada

PATENTS

1. **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.
2. **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.

3. **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.
4. **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.
5. **A. Wong** and H. Zhou, “Method and Apparatus for Automatic Image Categorization”, filed through Seiko Epson Corp., United States Patent Application 20080089591.
6. **A. Wong** and H. Zhou, “Method and Apparatus for Automatic Image Categorization”, filed through Seiko Epson Corp., European Patent Application EP1912161.
7. **A. Wong** and H. Zhou, “Method to automatically classify input image”, filed through Seiko Epson Corp., Japanese Patent Application JP2008097607.

PUBLICATIONS

Refereed Journal Papers Accepted (25)

1. **A. Wong**, D.A. Clausi, and P. Fieguth, “CPOL: Complex phase order likelihood as a similarity measure for MR-CT registration”, in Medical Image Analysis, vol. 14, no. 1, pp. 50-57, 2010.
2. **A. Wong**, “An Adaptive Monte Carlo Approach to Phase-Based Multimodal Image Registration”, IEEE Transactions on Information Technology in Biomedicine, vol. 14, no. 1, pp. 173-179, 2010.
3. **A. Wong**, A. Mishra, J. Yates, D.A. Clausi, P. Fieguth, and J. Callaghan, “Intervertebral Disc Segmentation and Volumetric Reconstruction from Peripheral Quantitative Computed Tomography Imaging”, IEEE Transactions on Biomedical Engineering, vol. 56, part 2, no. 11, 2748-2751, 2009.
4. **A. Wong**, A. Mishra, K. Bizheva, and D.A. Clausi, “General Bayesian estimation for speckle noise reduction in optical coherence tomography retinal imagery”, Optics Express, vol. 18, no. 8, pp. 8338-8352, 2010.
5. A. Mishra, **A. Wong**, K. Bizheva, and D.A. Clausi, ‘Intra-retinal layer segmentation in optical coherence tomography images”, selected for OSA Virtual Journal for Biomedical Optics, vol. 5, no. 1, 2010.
6. A. Mishra, **A. Wong**, K. Bizheva, and D.A. Clausi, ‘Intra-retinal layer segmentation in optical coherence tomography images”, in Optics Express, vol. 17, no. 26, pp. 23719-23728, 2010.
7. **A. Wong**, “Alignment of Confocal Scanning Laser Ophthalmoscopy Photoreceptor Images at Different Polarizations using Complex Phase Relationships”, in IEEE Transactions on Biomedical Engineering, Vol. 56, No. 7, pp. 1831-1837, 2009.
8. **A. Wong** and J. Scharcanski, “Phase-Adaptive Superresolution of Mammographic Images using Complex Wavelets”, in IEEE Transactions on Image Processing, Vol. 18, No. 5, pp. 1140-1146, 2009.
9. **A. Wong**, N. Dunk, and J. Callaghan, “A Systematic Approach to Lumbar Spine Vertebrae Tracking in Fluoroscopic Images using Complex-Valued Wavelets”, in Computer Methods in Biomechanics and Biomedical Engineering, DOI: 10.1080/10255840902802891, 10 pages, 2009.
10. L. da Silva, J. Scharcanski, **A. Wong**, and D. Koff, “An Interactive Modeling and Evaluation of Tumor Growth”, accepted to Journal of Digital Imaging, 2009.
11. **A. Wong** and J. Orchard, “Robust Multimodal Registration using Local Phase Coherence Representations”, in Journal of Signal Processing Systems: Special Issue on Biomedical Imaging, Vol. 54, No. 1, pp. 89-100, 2009.
12. **A. Wong** and D.A. Clausi, “AISIR: Automated Inter-sensor/Inter-band Satellite Image Registration using Robust Complex Wavelet Feature Representations”, accepted to Pattern Recognition Letters J., 2009.
13. **A. Wong**, P. Yu, W. Zhang, and D.A. Clausi, “Synthesis of SAR Sea-Ice Imagery using Region-based Local Conditional Posterior Sampling”, accepted to IEEE Geosciences and Remote Sensing Letters, 2009.
14. A. Mishra, **A. Wong**, D.A. Clausi, and P. Fieguth, “Quasi-Random Nonlinear Scale Space”, accepted to Pattern Recognition Letters J., 2010.

15. X. Wang, **A. Wong**, and P. Ho, “Extended Knowledge-Based Reasoning Approach to Spectrum Sensing for Cognitive Radio”, IEEE Transactions on Mobile Computing, vol. 9, no. 4, pp. 465-478, 2010. **Selected as the spotlight paper for April 2010 by IEEE Transactions on Mobile Computing.**
16. X. Wang, **A. Wong**, and P. Ho, “DOSP: Dynamically Optimized Spatiotemporal Prioritization for Spectrum Sensing in Cooperative Cognitive Radio”, in ACM Wireless Networks, DOI: 10.1007/s11276-009-0175-0, 13 pages, 2009.
17. **A. Wong** and P. Fieguth, “Fast Phase-based Registration of Multimodal Image Data”, in Signal Processing, Vol. 89, pp. 724-737, 2009. **Listed as #2 in this journal by ScienceDirect’s Top25 Hottest Articles, January-March 2009.**
18. **A. Wong** and J. Orchard, “Efficient FFT-Accelerated Approach to Invariant Optical-LIDAR Registration”, in IEEE Transactions on Geoscience and Remote Sensing, Vol. 46, No. 11, Part II, pp. 3917-3925, 2008.
19. **A. Wong**, “PECSI: a Practical Perceptually-Enhanced Compression Framework for Still Images”, accepted to International Journal of Image and Graphics, 2009.
20. **A. Wong**, “Adaptive Bilateral Filtering of Image Signals using Local Phase Characteristics”, in Signal Processing, Vol. 88, No. 6, pp. 1615-1619, 2008.
21. **A. Wong** and W. Bishop, “Efficient Least Squares Fusion of MRI and CT Images Using a Phase Congruency Model”, in Pattern Recognition Letters J., Vol. 29, No. 3, pp. 173-180, 2008.
22. **A. Wong**, “A Visual-Inertial Controller Approach to Improving Immersion in 3D Video Games”, Journal of CGSA, Vol. 1, No. 2, 2008.
23. **A. Wong** and D.A. Clausi, “ARRSI: Automatic Registration of Remote Sensing Images”, in IEEE Transactions on Geoscience and Remote Sensing, Vol. 45, No. 5, Part II, pp. 1483-1493, 2007.
24. **A. Wong** and W. Bishop, “Practical Perceptually Adaptive Texture Map Compression for 3D Video Games”, in Journal of Game Development, Vol. 2, No. 4, pp. 5-23, 2007.
25. **A. Wong** and W. Bishop, “Perceptually-Adaptive Image Super-resolution using Statistical Methods”, in WSEAS Transactions on Signal Processing, vol. 3, pp. 44-49, January 2007.

Refereed Conference Papers Accepted (50)

26. **A. Wong** and P. Fieguth, “A new Bayesian source separation approach to blind decorrelation of SAR data”, accepted to IEEE International Geoscience and Remote Sensing Syposium (IEEE IGARSS 2010), 2010.
27. Y. Liu, **A. Wong**, and P. Fieguth, “Remote sensing image synthesis”, accepted to IEEE International Geoscience and Remote Sensing Syposium (IEEE IGARSS 2010), 2010.
28. **A. Wong**, A. Mishra, D.A. Clausi, and P. Fieguth, “Quasi-Random Scale Space Approach to Robust Keypoint Extraction in High-Noise Environments”, accepted to the Canadian Conference on Computer and Robot Vision (CRV), 2010.
29. **A. Wong**, A. Mishra, D.A. Clausi, and P. Fieguth, “Mammogram Image Superresolution Based on Statistical Moment Analysis”, accepted to the Canadian Conference on Computer and Robot Vision (CRV), 2010.
30. A. Mishra, **A. Wong**, D.A. Clausi, and P. Fieguth, “A Bayesian Information Flow Approach to Image Segmentation”, accepted to the Canadian Conference on Computer and Robot Vision (CRV), 2010.
31. X. Wang, **A. Wong**, and P. Ho, “Dynamic Markov-Chain Monte Carlo channel negotiation for cognitive radio”, accepted to IEEE INFOCOM 2010, 2010.
32. **A. Wong**, D.A. Clausi, and P. Fieguth, “Adaptive Monte Carlo Retinex Method for Illumination and Reflectance Separation and Color Image Enhancement”, in the proceedings of the Canadian Conference on Computer and Robot Vision (CRV), 2009. **Won CIPPRS Conference Best Paper Award.**
33. **A. Wong**, D.A. Clausi, and P. Fieguth, “SEC: Stochastic ensemble consensus approach to unsupervised SAR sea-ice segmentation”, in the proceedings of the Canadian Conference on Computer and Robot Vision (CRV), 2009.

34. **A. Wong**, W. Zhang, and D.A. Clausi, “IceSynth: An image synthesis system for sea-ice segmentation evaluation”, in the proceedings of the Canadian Conference on Computer and Robot Vision (CRV), 2009.
35. W. Zhang, **A. Wong**, and D.A. Clausi, “JEDI: Joint Enhancement and Despeckling of Images”, in the proceedings of the Canadian Conference on Computer and Robot Vision (CRV), 2009.
36. X. Wang, **A. Wong**, and P. Ho, “Prioritized Spectrum Sensing in Cognitive Radio Based on Spatiotemporal Statistical Fusion”, in the proceedings of IEEE Wireless Communications and Networking Conference (IEEE WCNC), 2009.
37. X. Wang, **A. Wong**, and P. Ho, “Stochastic Channel Prioritization for Spectrum Sensing in Cooperative Cognitive Radio”, in the proceedings of IEEE Consumer Communications and Networking Conference (IEEE CCNC), 2009.
38. **A. Wong**, D.A. Clausi, and P. Fieguth, “Phase-Adaptive Image Signal Fusion using Complex-valued Wavelets”, in the proceedings of International Conference on Pattern Recognition (ICPR), 2008.
39. **A. Wong**, A. Mishra, P. Fieguth, and D.A. Clausi, “An Adaptive Monte Carlo Approach to Nonlinear Image Denoising”, in the proceedings of International Conference on Pattern Recognition (ICPR), 2008.
40. **A. Wong**, “Simultaneous Multi-modal Registration of Multiple Images based on Multi-Dimensional Joint Phase Moment Distributions”, in the proceedings of International Conference on Pattern Recognition (ICPR), 2008.
41. **A. Wong**, P. Fieguth, and D.A. Clausi, “A Perceptually-adaptive Approach to Image Denoising using Anisotropic Non-Local Means”, in the proceedings of IEEE International Conference on Image Processing (ICIP), 2008.
42. **A. Wong** and J. Orchard, “An Adaptive Non-local Means Approach to Exemplar-based Inpainting”, in the proceedings of IEEE International Conference on Image Processing (ICIP), 2008.
43. **A. Wong**, “Illumination Invariant Active Contour-based Segmentation using Complex-valued Wavelets”, in the proceedings of IEEE International Conference on Image Processing (ICIP), 2008.
44. J. Orchard, M. Ebrahimi, and **A. Wong**, “Efficient Nonlocal-Means Denoising using the SVD”, in the proceedings of IEEE International Conference on Image Processing (ICIP), 2008.
45. **A. Wong**, A. Mishra, P. Fieguth, D.A. Clausi, N. Dunk, J. Callaghan, “Shape-Guided Active Contour Based Segmentation and Tracking of Lumbar Vertebrae in Video Fluoroscopy Using Complex Wavelets”, in the proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC), 2008.
46. A. Mishra, **A. Wong**, W. Zhang, P. Fieguth, and D.A. Clausi, “Improved Interactive Medical Image Segmentation using Enhanced Intelligent Scissors (EIS)”, in the proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC), 2008.
47. **A. Wong** and D.A. Clausi, “Automatic Registration of Inter-band and Inter-sensor Images using Robust Complex Wavelet Feature Representations”, in the proceedings of IAPR Workshop on Pattern Recognition in Remote Sensing (PRRS), 2008.
48. **A. Wong** and W. Bishop, “Robust Edge Detection Based on Non-Local Contribution of Local Frequency Characteristics”, in the proceedings of IEEE International Symposium on Multimedia (IEEE ISM), 2008.
49. **A. Wong** and W. Bishop, “Deblocking of Block-Transform Compressed Images Using Phase-adaptive Shifted Thresholding”, in the proceedings of IEEE International Symposium on Multimedia (IEEE ISM), 2008.
50. **A. Wong**, A. Mishra, D.A. Clausi, and P. Fieguth, “Adaptive nonlinear image denoising and restoration using a cooperative Bayesian estimation approach”, in the proceedings of The IEEE Indian Conference on Computer Vision, Graphics and Image Processing (IEEE ICVGIP), 2008.
51. X. Wang, P. Ho, and **A. Wong**, “Towards Efficient Spectrum Sensing for Cognitive Radio Through Knowledge-Based Reasoning”, in the proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks 2008 (IEEE DySPAN 2008), 2008.
52. **A. Wong** and W. Bishop, “Robust Hough-Based Symbol Recognition using Knowledge-based Hierarchical Neural Networks”, in the proceedings of International Conference on Image Processing, Computer Vision, and Pattern Recognition, 2008.

53. **A. Wong** and W. Bishop, “Efficient and Robust Approach to Simultaneous Non-rigid Image Registration and Gamma Estimation in the Frequency Domain”, in the proceedings of International Conference on Image Processing, Computer Vision, and Pattern Recognition, 2008.
54. **A. Wong**, “An Iterative Approach to Improved Local Phase Coherence Estimation”, in the proceedings of Sixth Canadian Conference on Computer and Robot Vision (CRV 2008), May 2008.
55. **A. Wong** and W. Bishop, “Perceptually-Adaptive Color Enhancement of Still Images for Dichromacy Deficiencies”, in the proceedings of IEEE CCECE 2008: Symposium on Signal and Multimedia Processing, May 2008.
56. M. Hansen, W. Bishop, A. Bellemaire, and **A. Wong**, “Decompressing Perceptually Adaptive Normal Map Compression (PANMC) Images in Hardware”, in the proceedings of IEEE CCECE 2008: Symposium on Signal and Multimedia Processing, May 2008.
57. **A. Wong** and A. Kennings, “Adaptive Multiple Texture Approach to Texture Packing for 3D Video Games”, in the proceedings of ACM FuturePlay 2007, Toronto, Ontario, November 2007.
58. **A. Wong** and W. Bishop, “Robust Invariant Descriptor for Symbol-Based Image Recognition and Retrieval”, in the proceedings of the IEEE International Conference on Semantic Computing, Irvine, California, September 2007.
59. **A. Wong** and W. Bishop, “Adaptive Large Scale Artifact Reduction in Edge-Based Image Super-Resolution”, in the proceedings of the IASTED International Conference on Signal and Image Processing, Honolulu, Hawaii, August 2007.
60. **A. Wong** and W. Bishop, “Backwards Compatible, Multi-Level Regions-of-Interest (ROI) Image Encryption Architecture with Biometric Authentication”, in the proceedings of SIGMAP 2007: The International Conference on Signal Processing and Multimedia Applications, Barcelona, Spain, July 2007.
61. **A. Wong** and W. Bishop, “Simultaneous Registration and Gamma Correction in the Frequency Domain”, in the proceedings of the 2007 International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, Nevada, June 2007.
62. **A. Wong** and W. Bishop, “Indirect Knowledge Based Approach to Non-Rigid Multi-Modal Registration of Medical Images”, in the proceedings of IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, April 2007.
63. **A. Wong** and W. Bishop, “Practical Perceptually Adaptive Approach to Video Logo Placement in TV Broadcasts”, in the proceedings of IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, April 2007.
64. M. Hansen, **A. Wong** and W. Bishop, “A Hardware Implementation of Real-Time Video Deblocking Using Shifted Thresholding”, in the proceedings of IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, April 2007.
65. **A. Wong** and W. Bishop, “Intelligent Multi-Level Regions-of-Interest (ROI) Document Image Encryption using an Online Learning Model”, in the proceedings of IASTED International Conference on Signal Processing, Pattern Recognition and Applications, Austria, February 2007.
66. **A. Wong** and W. Bishop, “Adaptive Perceptual Degradation Based on Video Usage”, in the proceedings of IEEE International Symposium on Multimedia, San Diego, December 2006.
67. **A. Wong** and W. Bishop, “Practical Content-Adaptive Subsampling for Image and Video Compression”, in the proceedings of IEEE International Symposium on Multimedia, San Diego, December 2006.
68. **A. Wong** and W. Bishop, “Adaptive Normal Map Compression for 3D Video Games”, in the proceedings of FuturePlay 2006, London, Ontario, Canada, October 2006.
69. **A. Wong** and W. Bishop, “Efficient Deblocking of Block-Transform Compressed Images and Video Using Shifted Thresholding”, in the proceedings of the IASTED International Conference on Signal and Image Processing, Honolulu, Hawaii, August 2006.
70. **A. Wong** and W. Bishop, “An Efficient, Parallel Multi-Key Encryption of Compressed Video Streams”, in the proceedings of the IASTED International Conference on Signal and Image Processing, Honolulu, Hawaii, August 2006.
71. **A. Wong** and W. Bishop, “A Flexible Content-Based Approach to Adaptive Image Compression”, in the proceedings of the IEEE International Conference on Multimedia & Expo, Toronto, Ontario, Canada, July 2006.

72. **A. Wong** and W. Bishop, “Expert Knowledge Based Automatic Regions-of-Interest (ROI) Selection in Scanned Documents for Digital Image Encryption”, in the proceedings of the 3rd Canadian Conference on Computer and Robot Vision, Quebec City, Quebec, Canada, June 2006.
73. **A. Wong**, W. Bishop and Jeff Orchard, “Efficient Multi-Modal Least-Squares Alignment of Medical Images Using Quasi-Orientation Maps”, in the proceedings of the 2006 International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, Nevada, June 2006.
74. **A. Wong** and Jeff Orchard, “Efficient and Robust Non-Rigid Least-Squares Rectification of Medical Images, in the proceedings of the 2006 International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, Nevada, June 2006.
75. Asad Munshi, **A. Wong**, A. Clinton, S. Braganza, W. Bishop, and M. McCool, “A Parameterizable SIMD Stream Processor”, in the proceedings of the 2005 IEEE Canadian Conference on Electrical and Computer Engineering, Saskatoon, Saskatchewan, Canada, May 2005.

Presentations (8)

1. **A. Wong**, “Stochastic multi-scale strategies for biomedical image analysis”, presented at University of Waterloo Graduate Student Research Conference, Waterloo, Ontario, Canada, April 2010. **Won Best Oral Presentation Award.**
2. **A. Wong**, “IceSynth: An image synthesis system for sea-ice segmentation evaluation”, presented at GEOIDE Annual Conference, Vancouver, BC, Canada, May 2009.
3. **A. Wong**, “Pre-processing/Filtering for Computer Vision”, presented at CRV Tutorial Day 2009, Kelowna, BC, Canada, May 2009.
4. **A. Wong**, “SEC: Stochastic ensemble consensus approach to unsupervised SAR sea-ice segmentation”, presented at University of Waterloo Graduate Student Research Conference, Waterloo, Ontario, Canada, April 2009.
5. A. Mishra, **A. Wong**, W. Zhang, P. Fieguth, and D.A. Clausi, “Improved Interactive Medical Image Segmentation using Enhanced Intelligent Scissors (EIS)”, presented at Imagine Imaging Workshop on Biomedical Imaging Technologies, 2008.
6. **A. Wong**, “An Adaptive Non-local Means Approach to Exemplar-based Inpainting”, presented at University of Waterloo Graduate Student Research Conference, Waterloo, Ontario, Canada, April 2008.
7. **A. Wong**, “Indirect Knowledge Based Approach to Non-Rigid Multi-Modal Registration of Medical Images”, presented at University of Waterloo Graduate Student Research Conference, Waterloo, Ontario, Canada, April 2007.
8. **A. Wong**, “Efficient Multi-key Encryption of Compressed Video Streams”, presented at University of Waterloo Graduate Student Research Conference, Waterloo, Ontario, Canada, April 2006.

TEACHING EXPERIENCE

Adjunct Lecturer May-Aug 2010
University of Waterloo, Waterloo, ON, Canada

- Teaching MTE 140 “Algorithms and Data Structures” to first-year students.
- Developing examination questions for the midterm and final examinations.
- Managing graduate student teaching assistants for MTE 140.

Adjunct Lecturer Sept-Dec 2008, Sept-Dec 2009
University of Waterloo, Waterloo, ON, Canada

- Taught SYDE 575 “Introduction to Image Processing” to fourth-year and M.A.Sc. students.
- Designed and developed a brand-new curriculum for the course, including new course material such as lecture slides, laboratory assignments, and course projects.
- Developed examination questions for the midterm and final examinations.

- Managed graduate student teaching assistants for SYDE 575.
- **Teaching evaluation average of 92%, with a quality of teaching score of 93%**

Teaching Assistant Jan-Apr 2010
University of Waterloo, Waterloo, ON, Canada

- Provided teaching assistance to Prof. Ossama El Badawy for SYDE 372 “Introduction to Pattern Recognition”.
- Gave a number of tutorials over the course of the term.
- Graded lab reports and examination questions from both midterm and final exam papers.

Teaching Assistant May-Aug 2009
University of Waterloo, Waterloo, ON, Canada

- Provided teaching assistance to Prof. Hanan Ayad for MTE 140 “Algorithms and Data Structures”.
- Supervised laboratory sessions over the course of the term.
- Graded assignments and examination questions from both midterm and final exam papers.

Teaching Assistant May-Aug 2008
University of Waterloo, Waterloo, ON, Canada

- Provided teaching assistance to Prof. John Zelek for SYDE 361 “Introduction to Design”.
- Supervised three student design groups of 5 students in the design and development of a group engineering project over the course of the term.
- Graded project reports, assignments, and presentations.

Teaching Assistant Jan-Apr 2008
University of Waterloo, Waterloo, ON, Canada

- Provided teaching assistance to Prof. Paul Fieguth for SYDE 372 “Introduction to Pattern Recognition”.
- Gave a number of tutorials over the course of the term.
- Graded lab reports and examination questions from both midterm and final exam papers.

Teaching Assistant Sept-Dec 2006
University of Waterloo, Waterloo, ON, Canada

- Provided teaching assistance to Prof. William Bishop for SE 101 “Introduction to Software Engineering”.
- Supervised group projects for several student groups in the development of an autonomous robot.
- Graded group reports and assignments.

INDUSTRIAL EXPERIENCE

Image Processing Researcher Sept-Dec 2004, Sept 2005-May 2007
Epson Canada Limited, Toronto, ON, Canada

- Researched and developed a set of image processing and computer vision algorithms for:
  - content-based image retrieval
  - automated panorama generation
  - automated shot boundary detection
  - multimodal sensor fusion for inertial-laser-optical hybrid motion tracking systems
- Three US patents, two US patent applications, one European patent application, and one Japanese patent application were awarded for the performed research.

Solution Developer 2001-2003
RoboCoder Corporation, Vancouver, BC, Canada

- Developed web service and interface, report generation engine, workflow design engine, and database infrastructure for the Rintagi self-generating business intelligence software development tool.

SUPERVISION

- Christopher Best, Al Amir, and Kyle Morrison, “Spatial Input Through Image Recognition”, Fourth-year Design Group, 2009-2010.

MEMBERSHIPS

- Institute of Electrical and Electronics Engineers (IEEE)
- Association for Computing Machinery (ACM)
- Canadian Game Studies Association (CGSA)
- The University of Waterloo’s Club for Undergraduate Bioengineering (CUBE) and student chapter of IEEE Engineering in Medicine and Biology Society (IEEE EMBS)

SERVICE

- Editorial Board Member, Journal of CGSA.
- I review one paper per month on average and have served as a reviewer for the following research journals and conferences:
  - IEEE Transactions on Image Processing.
  - IEEE Journal on Selected Areas in Communications.
  - IEEE Journal of Selected Topics in Earth Observations and Remote Sensing.
  - IEEE Signal Processing Letters.
  - IEEE Geoscience and Remote Sensing Letters.
  - Optics Express, Optical Society of America.
  - Pattern Recognition Letters, Elsevier.
  - Signal Processing: Image Communication, Elsevier.
  - Signal Processing, Elsevier.
  - Computer and Geoscience, Elsevier.
  - Information Fusion, Elsevier.
  - Journal of Signal Processing Systems, Springer.
  - Journal of Electrical and Computer Engineering, Hindawi.
  - EURASIP Journal on Image and Video Processing, Hindawi.
  - 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.
  - Journal of CGSA.
  - IEEE International Symposium on Geoscience and Remote Sensing (IEEE IGARSS), 2009, 2010.
  - IEEE International Conference on Image Processing (IEEE ICIP), 2008.
  - IEEE International Conference on Semantic Computing (IEEE ICSC), 2008.
  - IEEE Canadian Conference on Electrical and Computer Engineering (IEEE CCECE), 2008.
  - The 34th Annual Conference of the IEEE Industrial Electronics Society (IEEE IECON), 2008.
- I have also volunteered for Biomedical Imaging and Computer Vision Symposium (BICV), 2007.

References

Dr. David A. Clausi
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Dr. William Bishop
Definite-Term Lecturer
Department of Computer and Electrical Engineering
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