

EDUCATION

Ph.D. in Systems Design Engineering University of Waterloo (Vision & Image Processing Lab) <ul style="list-style-type: none">• Thesis: "Automatic Identification of Algae using Low-cost Multispectral Fluorescence Digital Microscopy, Hierarchical Classification & Deep Learning".• Supervised by Dr. Alexander Wong and Dr. Chao Jin.• Final GPA of 91%.	Sept 2016 – Dec 2019 Waterloo, ON, Canada
M.A.Sc. in Systems Design Engineering University of Waterloo (Vision & Image Processing Lab) <ul style="list-style-type: none">• Thesis: "Numerical Demultiplexing of Color Image Sensor Measurements via Non-linear Random Forest Modeling".• Supervised by Dr. Alexander Wong and Dr. David Clausi.• Final GPA of 91%.	Sept 2014 – Aug 2016 Waterloo, ON, Canada
Bachelor of Electrical Engineering with Distinction, Co-op University of Victoria <ul style="list-style-type: none">• Specialization in Digital Signal Processing (DSP).• Final GPA of 8.03/9.00 (3.86/4.00).	Sept 2010 – Aug 2014 Victoria, BC, Canada
Engineering Transfer Program University of the Fraser Valley	Sept 2008 – April 2010 Abbotsford, BC, Canada

SCHOLARSHIPS & ACADEMIC AWARDS

Davis Memorial Scholarship in Ecology (University of Waterloo)	Nov 2018 – April 2019
T.E. Unny Memorial Award (University of Waterloo)	Nov 2018
Sandford Fleming Foundation TA Award (University of Waterloo)	Nov 2016
President's Graduate Scholarship (University of Waterloo)	Sept 2016 – Aug 2019
Alexander Graham Bell Canada Graduate Scholarship – Doctoral (NSERC)	Sept 2016 – Aug 2019
Best Paper Award (Conference on Vision and Imaging Systems)	Oct 2015
Distinguished Paper Award (Conference of Society of Information Display)	June 2015
Queen Elizabeth II Graduate Scholarship (University of Waterloo)	April 2015 – May 2016
Andreas Antoniou Medal for Digital Signal Processing (University of Victoria)	June 2015
Graduate Research Studentship (MITACS)	Sept 2014 – April 2015
Dean's Graduate List (University of Victoria)	Aug 2014
3rd Place Award with UVic AERO Team (Unmanned Systems Canada)	May 2 – 4, 2014
2nd Place Award for Fourth Year Technical Design Project (University of Victoria)	April 2014
Radio Amateurs of Canada Scholarship (Radio Amateurs of Canada)	Oct 2013
2013 Co-op Scholarship (MacDonald, Dettwiler and Associates)	Aug 2013
Most Improved Speaker Award (Toastmasters MDA)	Aug 2013
Talbot Memorial Fund Award (University of Victoria)	Mar 2013
2012 Co-op Student of the Year Award (University of Victoria)	Dec 2012
President's Scholarship (University of Victoria)	Aug 2011, Aug 2012

ACADEMIC WORK EXPERIENCE

Teaching Assistant: Systems Design Engineering 162 – Human Factors in Design	May 2018 – Aug 2018
Teaching Assistant: Systems Design Engineering 372 – Introduction to Pattern Recognition	Jan 2018 – April 2018
Teaching Assistant: Biomedical Engineering 364 – Engineering Biomedical Economics	Sept 2017 – Dec 2017
Teaching Assistant: Systems Design Engineering 361 – Engineering Design	May 2016 – Aug 2016
Teaching Assistant: Biomedical Engineering 114 – Numerical and Applied Calculus	Jan 2016 – April 2016
Teaching Assistant: Systems Design Engineering 114 – Numerical and Applied Calculus University of Waterloo	May 2015 – Aug 2015 Waterloo, ON, Canada
Summer School Teacher	May 2014 – Aug 2014
Personal Tutor	Victoria, BC, Canada

ACADEMIC SUPERVISION

Michael Shiozaki (Co-op)	June 2019 – Aug 2019
Saba Katabchi Haghghat (awarded NSERC USRA)	Jan 2019 – April 2019
Sam Feng (awarded NSERC USRA)	Sept 2018 – Dec 2018
Vignesh Sivan (awarded NSERC USRA)	Sept 2018 – Dec 2018
Angela Jiahua Chao (awarded NSERC USRA)	Jan 2017 – April 2017
Lyndon Tang (Internship)	July 2018 – Aug 2018
Ryan Zhang (Volunteer)	May 2018 – July 2018
Yitian Wang (Co-op)	May 2018 – Aug 2018
Lyndon Tang (Internship)	July 2017 – Sept 2017
Angela Jiahua Chao (awarded NSERC USRA)	Jan 2017 – April 2017
Kuil Schoneveld (URA)	May 2016 – Aug 2016
University of Waterloo	Waterloo, ON, Canada

INDUSTRIAL WORK EXPERIENCE

Postdoctoral Fellow University of Waterloo	Jan 2020 – present Waterloo, ON, Canada
Co-founder & CEO Blue Lion Labs Ltd.	June 2017 – present Waterloo, ON, Canada
President Co-founder & CEO Hedgehog Medical Inc.	May 2018 – present Jan 2016 – April 2018 Waterloo, ON, Canada
3D Research Engineer, M.A.Sc Candidate Christie Digital Systems Inc.	Sept 2014 – April 2015 Kitchener, ON, Canada
Research & Development Software Developer, Co-op MacDonald, Dettwiler and Associates Ltd. (MDA)	Jan 2013 – Aug 2013 Richmond, BC, Canada
Unmanned Aerial Systems Intern National Aerospace Laboratory (NLR)	May 2012 – July 2012 Amsterdam, the Netherlands
Camera Electrical Engineer Associate, Co-op Camera Development Engineer Associate, Co-op Research In Motion (BlackBerry)	Sept 2011 – Dec 2011 Jan 2011 – Apr 2011 Waterloo, ON, Canada

ADDITIONAL TRAINING & CERTIFICATES

Optical System Design: Layout Principles and Practice (SPIE Photonics West)	Jan 27, 2019
Statistics for Imaging and Sensor Data (SPIE Photonics West)	Jan 26, 2019
Taxonomy, Identification and Ecology of Algae (PhycoTech)	July 9 – 13, 2018
Data Scientist with Python (DataCamp)	June 2018 – Nov 2018
Certificate of University Teaching (University of Waterloo)	May 2017 – April 2018
Fundamentals of University Teaching (University of Waterloo)	Dec 2016
Summer Company Program (Waterloo Region Small Business Center)	May 2016 – Aug 2016
ExpectATions Teaching Assistant Workshop (University of Waterloo)	April 28-29, 2015
Dutch Language Lessons (University of Waterloo)	Sept 2014 – April 2015, Sept 2015 – April 2016
Discovering the Entrepreneur Within Workshop (Mitacs)	Oct 31, 2014
Computation Photography (Georgia Institute of Technology via Coursera)	Mar 2013
Control of Mobile Robots (Georgia Institute of Technology via Coursera)	Jan 2013
Amateur Radio License: Basic with Honours (Radio Amateurs of Canada)	Dec 2012

VOLUNTEER PROFESSIONAL SERVICES

Vice-President of Academic for the WAII Graduate Student Association (volunteer) Waterloo Artificial Intelligence Institute (WAII)	Sept 2018 – Dec 2019 Waterloo, ON, Canada
Assistant Organizer (volunteer) Conference on Vision and Imaging Systems (CVIS) 2017 Organizing Committee	Oct 30-31, 2017 Waterloo, ON, Canada
Graduate Student Representative (volunteer) UWaterloo Systems Design Engineering Chair Selection Nominating Committee	May 2017 – April 2018 Waterloo, ON, Canada

SOCIETY & CLUB MEMBERSHIPS

Member (Canadian Water Research Association (CWRA))	Feb 2019 – Feb 2020
Member (Global Lakes Ecological Observatory Network (GLEON))	July 2018 – present
Student Member (American Water Works Association)	March 2017 – Dec 2019
Student Member (SPIE Student Chapter)	Sept 2015 – Dec 2019
Student Member (SPIE)	July 2015 – July 2016, Feb 2019 – Feb 2020
Student Member (IEEE)	March 2015 – Feb 2016
Student Member (Society for Information Display)	March 2015 – March 2016
Member (University of Victoria AERO Club)	Sept 2013 – Aug 2014
Member (Toastmasters MDA Corporate Club)	Jan 2013 – Aug 2013
Member (University of Victoria ECOSat Club)	May 2011 – Aug 2011
Member (University of Waterloo Photography Club)	Jan 2011 – Apr 2011

PUBLICATIONS

Theses

1. **Deglint, J. L.** (2020). Investigating the automatic classification of algae using the spectral and morphological characteristics via deep residual learning. University of Waterloo, Thesis (Ph.D.).
2. **Deglint, J. L.** (2016). Numerical demultiplexing of color image sensor measurements via non-linear random forest modeling. University of Waterloo, Thesis (M.A.Sc.).

Journals

1. **Deglint, J. L.**, Jin, C., & Wong, A. (2019). Investigating the Automatic Classification of Algae via Deep Residual Learning. Springer, Lecture Notes in Computer Science.
2. **Deglint, J. L.**, Tang, L., Wang, Y., Jin, C., & Wong, A. (2018). SAMSON: Spectral Absorption-fluorescence Microscopy System for ON-site-imaging of algae. *Journal of Computational Vision and Imaging Systems*, 4(1), 3–3.
3. Jin, C., Mesquita, M. M. F., **Deglint, J. L.**, Emelko, M. B., & Wong, A. (2018). Quantification of cyanobacterial cells via a novel imaging-driven technique with an integrated fluorescence signature. *Nature Scientific Reports*, 8(1), 9055.
4. **Deglint, J. L.**, Jin, C., Chao, A., & Wong, A. (2018). The Feasibility of Automated Identification of Six Algae Types using Feed-forward Neural Networks and Fluorescence-based Spectral-morphological Features. *IEEE Access*, 1–1.
5. Gawish, A., **Deglint, J. L.**, Zuj, K. A., Egana, A. M., Rocha, J., Wong, A., & Hughson, R. L. (2017). Determining Arterial Blood Velocity Using MAUI Software From Recorded Doppler Ultrasound Videos. *Artery Research*, (17).
6. Li, F., Sekkati, H., **Deglint, J.**, Scharfenberger, C., Lamm, M., Clausi, D., ... Wong, A. (2017). Simultaneous projector-camera self-calibration for three-dimensional reconstruction and projection mapping. *IEEE Transactions on Computational Imaging*, 3(1), 74–83.
7. **Deglint, J.**, Chao, J., & Wong, A. (2017). A Comprehensive Spectral Analysis of the Auto-fluorescence Characteristics of Three Algae Species at Twelve Discrete Excitation Wavelengths. *Journal of Computational Vision and Imaging Systems*.
8. **Deglint, J.**, Kazemzadeh, F., Cho, D., Clausi, D. A., & Wong, A. (2016). Numerical demultiplexing of color image sensor measurements via non-linear random forest modeling. *Nature Scientific Reports*, 6, 28665.
9. Boroomand, A., **Deglint, J.**, & Wong, A. (2016). Bayesian Compensated Microscopy. *Journal of Computational Vision and Imaging Systems*, 2(1).
10. Zuj, K., **Deglint, J.**, Gawish, A., Wong, A., Clausi, D. A., & Hughson, R. L. (2016). A new software for determining changes in arterial diameter over time. *Artery Research*, (16), 97.
11. **Deglint, J.**, Cameron, A., Scharfenberger, C., Sekkati, H., Lamm, M., Wong, A., & Clausi, D. A. (2016). Auto-calibration of a projector-camera stereo system for projection mapping. *Journal of the Society for Information Display*, 24(8), 510–520.
12. **Deglint, J. L.**, Schoneveld, K., Kazemzadeh, F., & Wong, A. (2016). A Compact Field-portable Computational Multispectral Microscope using Integrated Raspberry Pi. *Journal of Computational Vision and Imaging Systems*, 2(1).
13. Chwyl, B., Chung, A. G., **Deglint, J.**, Wong, A., & Clausi, D. (2015). Remote heart rate measurement through broadband video via stochastic bayesian estimation. *Journal of Computational Vision and Imaging Systems*, 1(1). **Best Paper Award**

14. **Deglint, J.**, Kazemzadeh, F., Wong, A., & Clausi, D. A. (2015). Numerical spectral demultiplexing microscopy of measurements from an anatomical specimen. *Journal of Computational Vision and Imaging Systems*.
15. **Deglint, J.**, Gawish, A., Zuj, K., Wong, A., Clausi, D. A., & Hughson, R. L. (2015). Active Contours for Measuring Arterial Wall Diameter of Astronauts from Ultrasound Images. *Journal of Computational Vision and Imaging Systems*.

Workshops

1. Dulhanty, C., **Deglint, J. L.**, Ben Daya, I., & Wong, A. (2019). Taking a Stance on Fake News: Towards Automatic Disinformation Assessment via Deep Bidirectional Transformer Language Models for Stance Detection. In *AI for Social Good Workshop. Conference on Neural Information Processing Systems*.

Conferences

1. **Deglint, J. L.**, Jin, C., & Wong, A. (2019). A Multispectral Bayesian-based Computational Microscopy Method for Enhancing Image Quality. In *Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XVII. International Society for Optics and Photonics*.
2. Shiozaki, M., Haghghat, S. K., Feng, S., Sivan, V., Wong, A., Harris, T. D., & **Deglint, J. L.** (2019). Interactive Tool for Aggregating and Visualizing Spatial and Temporal Harmful Cyanobacteria Bloom Data. In *Global Lakes Ecological Observatory Network (Vol. 21, p. 83)*.
3. Chwyl, B., Chung, A. G., Amelard, R., **Deglint, J.**, Clausi, D. A., & Wong, A. (2016). SAPPHERE: Stochastically acquired photoplethysmogram for heart rate inference in realistic environments. In *Image Processing (ICIP), 2016 IEEE International Conference on (pp. 1230–1234)*. IEEE.
4. **Deglint, J.**, Chung, A. G., Chwyl, B., Amelard, R., Kazemzadeh, F., Wang, X. Y., ... Wong, A. (2016). Photoplethysmographic imaging via spectrally demultiplexed erythema fluctuation analysis for remote heart rate monitoring. In *Multimodal Biomedical Imaging XI (Vol. 9701, p. 970111)*. International Society for Optics and Photonics.
5. Chwyl, B., Chung, A. G., Amelard, R., **Deglint, J.**, Clausi, D. A., & Wong, A. (2016). Time-frequency domain analysis via pulselets for non-contact heart rate estimation from remotely acquired photoplethysmograms. In *Computer and Robot Vision (CRV), 2016 13th Conference on (pp. 201–207)*. IEEE.
6. **Deglint, J.**, Kazemzadeh, F., Wong, A., & Clausi, D. A. (2015). Inference of dense spectral reflectance images from sparse reflectance measurement using non-linear regression modeling. In *Applications of Digital Image Processing XXXVIII (Vol. 9599, p. 95992G)*. International Society for Optics and Photonics.
7. **Deglint, J.**, Cameron, A., Scharfenberger, C., Lamm, M., Wong, A., & Clausi, D. (2015). 35.1: **Distinguished Paper**: Auto-Calibration for Screen Correction and Point Cloud Generation. In *SID Symposium Digest of Technical Papers (Vol. 46, pp. 507–510)*.
8. **Deglint, J.**, Kazemzadeh, F., Shafiee, M. J., Li, E., Khodadad, I., Saini, S. S., ... Clausi, D. A. (2015). Virtual spectral multiplexing for applications in in-situ imaging microscopy of transient phenomena. In *Applications of Digital Image Processing XXXVIII (Vol. 9599, p. 95992D)*. International Society for Optics and Photonics.

Patents

1. Scharfenberger, C., Sekkati, H., **Deglint, J.**, & Post, M. (2017). System and method for online projector-camera calibration from one or more images.

SPEAKING ENGAGEMENTS

Public Speaking

1. October 29, 2019: Speaker (Waterloo, ON, Canada). **President's Reception**, University of Waterloo
2. June 15, 2019: Speaker (Toronto, ON, Canada). 2019 AquaHacking Semifinals, AquaHacking
3. April 9, 2019: Oral Presentation (Waterloo, ON, Canada). Systems Design Engineering Graduate Colloquium, University of Waterloo
4. March 1, 2019: Speaker (Waterloo, ON, Canada). AquaHacking Information Session, AquaHacking and The Water institute
5. January 15, 2019: Speaker (Waterloo, ON, Canada). Systems Design Engineering Undergraduate Class, University of Waterloo
6. May 5, 2018: **Plenary Presentation** (Montreal, QC, Canada). Using **Technology and Entrepreneurship** to Solve Freshwater Issues, Great Lakes Economic Forum
7. March 21, 2018: Speaker (Toronto, ON, Canada). 2018 AquaHacking Launch, AquaHacking
8. November 1, 2017: **Plenary Speaker** (Toronto, ON, Canada). Ideas to Action, **Water Innovation** in Action

Panelist

1. June 11, 2020: Panelist (online). Post **COVID-19 Reboot Speaker Series** – Rebooting with Research: Tackling Real-World Problems, University of Waterloo
2. October 22, 2019: Panelist (Waterloo, ON, Canada). Turning Your Research Into a Startup, Concept
3. July 10, 2019: Panelist (Kitchener, ON, Canada). Working in the AI Industry, **Vector Institute for Artificial Intelligence**

Interviews

1. May 5, 2020: Interviewee (online). Bad Blooms: The Dark Side of Algae, AquaHacking Podcast

2. May 1, 2020: Webinar (online). Ask Me Anything (AMA): Algae Bloom and Eutrophication, AquaHacking
3. May 15, 2018: Interviewee (Michigan, USA). Could **artificial intelligence** help scientists fight toxic blooms?, **Michigan Public Radio**
4. November 14, 2017: Webinar (Ann Arbor, MI, USA). HABs Collaboratory Webinar - **Current and Emerging Technology** in the Great Lakes, **Great Lakes Commission**

Research Presentations

1. November 18, 2019: Oral Presentation (Waterloo, ON, Canada). PhD Defense Examination, University of Waterloo
2. November 5, 2019: Oral Presentation (Dallas, TX, USA). Taste & Odor Algae Identification and Monitoring, American Water Works Association (AWWA) Water Quality Technology Conference (WQTC)
3. February 6, 2019: Oral Presentation (San Francisco, CA, USA). A Multispectral Bayesian-based Computational Microscopy Method for Enhancing Image Quality, SPIE Photonics West
4. November 14, 2018: Oral Presentation (Toronto, ON, Canada). What Sensors Can do for Algae and Cyanotoxin Detection, American Water Works Association (AWWA) Water Quality Technology Conference (WQTC)
5. November 13, 2018: Oral Presentation (Alliston, ON, Canada). **Smart Tech and Artificial Intelligence** - Advances in Water Quality Management, Latornell Conservation Symposium
6. November 6, 2018: Oral Presentation (Waterloo, ON, Canada). SAMSON: Spectral Absorption-fluorescence Microscopy System for ON-site-imaging of algae, Conference on Vision and Intelligent Systems (CVIS)
7. November 27, 2017: Oral Presentation (Waterloo, ON, Canada). PhD Comprehensive Examination, University of Waterloo

Workshops

1. February 13, 2020: Speaker (Waterloo, ON, Canada). Ideation Workshop, Enactus

Public Pitches

1. June 20, 2019: Pitch (Cleveland, OH, USA). Erie Hack Finals, Erie Hack 2.0
2. June 5, 2019: Pitch (Detroit, MI, USA). Erie Hack Semi-finals, Erie Hack 2.0
3. May 8, 2019: Pitch (Vancouver, BC, Canada). Student Entrepreneur National Competition, Enactus Canada
4. April 13, 2019: Pitch (Detroit, MI, USA). Erie Hack Quarter-finals, Erie Hack 2.0
5. November 1, 2018: Pitch (**Tianjin, China**). **Artificial Intelligence for Algae Identification**, Future Engineers for Water and Environmental Safety Student Competition – Sino-Canada Joint R&D Center on Water and Environmental Safety
6. October 25, 2018: Speaker (Toronto, ON, Canada). 2018 AquaHacking Final, AquaHacking
7. September 13, 2017: Pitch (Waterloo, ON, Canada). 2017 AquaHacking Finals, AquaHacking
8. June 21, 2017: Pitch (Waterloo, ON, Canada). 2017 AquaHacking Semi-finals, AquaHacking