Yiping Wang

Curriculum vitae

Master of Mathematics student
Cheriton School of Computer Science
University of Waterloo
Waterloo, Ontario, Canada

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EDUCATION

University of Waterloo — Waterloo, Ontario, Canada
Master of Mathematics in Computer Science — Sept. 2021 – Present
Thesis Topic: Robust high-order optimization methods for unsupervised and weakly-supervised segmentation of biomedical images.
Supervisor: Dr. Yuri Boykov

University of Victoria — Victoria, British Columbia, Canada
Honours Bachelor of Science in Computer Science — Sept. 2017 – Apr. 2021
Cumulative GPA: 8.61 / 9.0 or 91.68%
Honours Project: **Learn by Review: Environment Generalization in Multi-agent Reinforcement Learning**
Supervisor: Dr. Brandon Haworth

CONFERENCE

– 2021

- A. Pesaranghader, Y. Wang, M. Havaei, **CT-SGAN: Computed Tomography Synthesis GAN**, 24th International Conference on Medical Image Computing and Computer Assisted Intervention Workshop on Deep Generative Models, October 1, 2021.
- Y. Wang, M. B. Haworth, **MASAI: Multi-agent Summative Assessment Improvement for Unsupervised Environment Design**, 38th International Conference on Machine Learning Workshop on Unsupervised Reinforcement Learning, July 24, 2021.

– 2020

- Y. Wang*, D. Farnell*, H. Farahani, M. Nursey, B. Tessier-Cloutier, S. J.M. Jones, D. G. Huntsman, C. Blake Gilks, A. Bashashati, **Classification of Epithelial Ovarian Carcinoma Whole-Slide Pathology Images Using Deep Transfer Learning**, 3rd International Conference on Medical Imaging with Deep Learning, Montréal, QC, Canada, 6 – 8 July, 2020. Acceptance Rate: 39.6% (42/106).

JOURNAL

– 2021

- M. Havaei*, X. Mao*, Y. Wang, Q. Lao, **Conditional Generation of Medical Images via Disentangled Adversarial Inference**, Medical Image Analysis.

– 2020

- A. Levine*, J. Peng*, D. Farnell, M. Nursey, Y. Wang, J. Naso, C. Ren, H. Farahani, B. Tessier-Cloutier, C. Chen, D. Chiu, A. Talhouk, B. Sheffield, M. Riazy, P. Ip, C. Parra-Heran, A. Mills, N. Singh, T. Salisbury, J. Lee, T. Salcudean, S. S.M. Jones, D. G. Hunts-

man, C. B. Gilks, S. Yip, A. Bashashati, **Synthesis of diagnostic quality cancer pathology images**, The Journal of Pathology

AWARDS AND SCHOLARSHIPS

– 2021

- **W.E. Cowie Innovation Award**, Estate of Charlotte Alexandra Nelson Cowie.
- **Vector Scholarship in Artificial Intelligence 2021-22**, Vector Institute.
- **International Master's Award of Excellence**, University of Waterloo.
- **University of Waterloo Entrance Scholarship**, University of Waterloo.

– 2020

- **Jamie Cassels Undergraduate Research Awards 2020-21**, University of Victoria.
- **Computer Science Co-op Report Prize**, University of Victoria.

RESEARCH EXPERIENCE

Research Assistant Sept. 2021 – Present
University of Waterloo Waterloo, Ontario, Canada

- Research in robust high-order optimization methods for unsupervised and weakly-supervised segmentation of biomedical images.

Research Assistant Sept. 2020 – Apr. 2021
University of Victoria Victoria, British Columbia, Canada

- Researched the value of training environments and generalization in Reinforcement Learning.

Research Intern May 2020 – Dec. 2020
Imagia Montréal, Québec, Canada

- Researched in generative models for lung 3D CT-scans.

Research Intern Sept. 2019 – Apr. 2020
University of British Columbia Vancouver, British Columbia, Canada

- Researched in patch-level and WSI-level classification for epithelial ovarian carcinoma whole-slide pathology images.

Research Intern May 2019 – Aug. 2019
University of Victoria Victoria, British Columbia, Canada

- Researched in patch-level tumour segmentation for the liver hepatocellular carcinoma whole-slide pathology images.

ACADEMIC SERVICES

– Peer Review

- Computer Animation & Virtual Worlds ($\times 1$)

– Talks

- An Introduction to Generative Adversarial Network in Medical Imaging, McMedHacks Workshop at McGill University, 18 July, 2021.

SOFTWARE DEVELOPMENT EXPERIENCE

Software Developer Intern May 2021 – Aug. 2021
Global Reach Group Victoria, British Columbia, Canada
- Database programming and management, and GitLab CI/CD for Gradle and .NET Core.

Software Developer Intern Sept. 2018 – Dec. 2018
Global Reach Canada Victoria, British Columbia, Canada
- Contributed to a currency exchange trading platform using Angular and C# .NET Core.

Software Developer Intern May 2018 – Aug. 2018
Kinsol Victoria, British Columbia, Canada
- Developed chatbot applications using Python Flask, JavaScript, Bootstrap and Rasa.

TECHNICAL REPORTS

– 2021
- Y. Wang, **Generalization Meets Optimization**, ECE573 Advanced Engineering Design by Optimization Capstone Project (93% A+), University of Victoria, Spring 2021.

– 2020
- Y. Wang, **Deep Reinforcement Learning and Visual Computing for Crowd Navigation**, CSC473 Fundamentals of Computer Animation Capstone Project (98% A+), University of Victoria, Fall 2020.

– 2019
- Y. Wang, C. Ten Have, M. Kennedy, **End-to-End Facial Expression Modifier**, CSC486B Deep Learning for Computer Vision Capstone Project (94% A+), University of Victoria, Spring 2019.
- B. Pattie, Y. Wang, **Segmentation of Overlapping Cervical Cells by Joint Level Set Method**, ECE435 Medical Image Processing Capstone Project (94% A+), University of Victoria, Spring 2019.

SKILLS

- **Languages**: Python, Java, C, C++, C#, SQL, Scala
- **Libraries**: PyTorch, TensorFlow, Angular, Unity, .NET, OpenCV, OpenGL
- **Tools**: Git, Docker, AWS, Linux, LaTeX

EXTRACURRICULAR ACTIVITIES

Waterloo Mathematics Undergraduate Research Conference 27^{th} – 30^{th} Sept. 2019
Attendee University of Waterloo, Waterloo, Ontario, Canada

Undergraduate Research Opportunities Conference 27^{th} – 30^{th} Sept. 2018
Attendee University of Waterloo, Waterloo, Ontario, Canada