

Honours Bachelor of Science

Department of Computer Science University of Victoria Victoria, British Columbia, Canada 103 E 62nd Ave Vancouver, BC V5X 2E7 (250) 885-2950 yiping@wang.vision yiping.wang.vision

AREA OF INTERESTS

My interests and enthusiasm are for Computer Vision, Medical Image Analysis and Machine Learning. I am exploring how to use medical image data and machine learning to help doctors make diagnostic decisions. I am broadly interested in machine learning for improving lesion detection and classification, anatomical structure segmentation and quantification, cancer diagnosis and therapy.

EDUCATION

Honours Bachelor of Science Computer Science, University of Victoria **Thesis**: Deep Learning for Computer Vision Cumulative GPA: 8.42 / 9.00 or 90.11%

Sept. 2017 – Present Victoria, British Columbia, Canada

Minor degree Electrical Engineering, University of Victoria May 2018 – Present Victoria, British Columbia, Canada

RESEARCH EXPERIENCE

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Research Intern

• Incoming Applied Research Intern

May 2020 – Aug. 2020 Montréal, Québec, Canada

Artificial Intelligence in Medicine Lab, University of British Columbia Sept. 2019 – Apr. 2020 Research Intern Vancouver, British Columbia, Canada

- Researched in patch-level and WSI-level classification for epithelial ovarian carcinoma whole-slide pathology images.
- Proposed and implemented deep learning-based multi-scale and transfer learning algorithms to improve patch-level classification accuracy as well as design novel algorithms for slide-level predictions.
- Benchmarked hand-crafted features, deep learning features and their combinations for patch-level classification
- Evaluated the synthetic patch-level pathology images generated by ProGAN as an augmentation step to improve the performance of CNN for patch-level classification.
- Performed survival analysis using the Cox regression of ovarian cancer patients' survival data.
- Designed and built general deep learning for pathology image classification platform using PyTorch, Docker and Kronos.

Visual Computing Group, University of Victoria

May 2019 – Aug. 2019

Research Intern

Victoria, British Columbia, Canada

- Researched in patch-level tumour segmentation for the liver hepatocellular carcinoma whole-slide pathology images.
- Implemented and applied a CVPR 2019 multi-scale with an adaptive weighting deep learning algorithm for automated patch-level detection and segmentation.
- Developed an unsupervised threshold-based algorithm for segmentation of the tumour area in PET scans as a preprocessing step for image registration.

PROFESSIONAL EXPERIENCE

EncoreFX Sept. 2018 – Dec. 2018

Software Developer Intern

Victoria, British Columbia, Canada

- Developed an online Foreign Exchange Trading and Payment platform, EncoreFX Express, using Angular and C# ASP.NET Core framework.
- Created user features and interfaces for facilitating interactions, which involves designing, developing, and testing new Angular components on the front-end, as well as building and updating new RESTful API on the back-end.
- Improved unit testing coverage using Jasmine, developed a Selenium test suite and researched in preventing Cross-Site Request Forgery and Cross-Site Scripting.

Kinsol May 2018 – Aug. 2018

Software Developer Intern

Victoria, British Columbia, Canada

- Developed responsive chatbot applications using Python Flask framework, JavaScript ES6, jQuery, and Bootstrap.
- Improved Deep Neural Networks through hyper-parameter tuning and regularization for the chatbot team
- Applied YOLO algorithm for detecting and recognizing various vehicles and pedestrians in Python for the computer vision team.

PEER-REVIEWED JOURNAL PUBLICATIONS

- -2020
- A. Levine*, J. Peng*, D. Farnell, M. Nursey, <u>Y. Wang</u>, 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. Huntsman, C. B. Gilks, S. Yip, A. Bashashati, **Synthesis of diagnostic quality cancer pathology images**, Science Advances, 2020. (under review)

PEER-REVIEWED CONFERENCE PUBLICATIONS

- -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. (accepted)

PROJECTS

- -2019
- Y. Wang, C. Ten Have and 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 and Y. Wang, Segmentation of Overlapping Cervical Cells by Joint Level Set Method, ECE435 Medical Image Processing Capstone Project (95% A+), University of Victoria, Spring 2019.

ACTIVITIES

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

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