

PASCALE WALTERS

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SUMMARY OF QUALIFICATIONS

- Working knowledge of Python, MATLAB, Java, JavaScript, C#, C++, Swift, and R programming languages
- Experience using Torch, OpenCV and TensorFlow libraries
- Excellent written and verbal communication skills in English and French
- Knowledge of Microsoft Azure and Amazon Web Services cloud platforms, bash, Apache web servers

EDUCATION

Candidate, Master of Applied Science, Systems Design Engineering, University of Waterloo June 2019 – Apr. 2021

- Sports Analytics Research Group, Vision and Image Processing Lab
- Courses: Advanced Image Processing, Graphical Deep Learning, Pattern Recognition, Deep Learning and Natural Language Processing

Bachelor of Applied Science, Biomedical Engineering, University of Waterloo, Waterloo, ON Sept. 2014 – Apr. 2019

- Graduation with distinction, Dean's honours list
- French Minor
- Capstone Project: Real-time image processing using a smartphone to alert cyclists of upcoming vehicles. Implemented using Python, OpenCV, and Swift

EMPLOYMENT EXPERIENCE

Graduate Research and Teaching Assistant, University of Waterloo, Waterloo, ON June 2019 - Present

- Implemented annotation tools in Python for use by external video analysts to gather ground truth data from video
- Developing novel techniques for sports field localization from broadcast video
- Teaching assistant for MTE 140: Data Structures and Algorithms (Spring 2020), BME 121: Digital Computation (Fall 2020)

Undergraduate Research Assistant, Vision and Image Processing Lab, University of Waterloo, Waterloo, ON Sept. 2018 – Apr. 2019

- Implemented pose estimation and action recognition algorithms for hockey goalies using a pre-trained neural network
- Developed annotation tools in Python for gathering ground truth data from video
- Gathered and preprocessed broadcast and publicly available video for annotation

Scientific Programmer, Molecular Oncology, BC Cancer, Vancouver, BC Jan. 2018 – Aug. 2018

- Developed pipelines for the analysis of single-cell DNA sequenced data and automation scripts used for launching in the cloud, using python and Microsoft Azure
- Implemented R packages for processing single-cell RNA sequenced data using machine learning techniques with TensorFlow

- Undergraduate Research Assistant**, Medical Physics, Grand River Regional Cancer Centre, Grand River Hospital, Kitchener, ON Sept. 2017 – Dec. 2017
- Developed a model of the rectum during radiation treatment of prostate cancer using Python
 - Processed patient data to evaluate the accuracy and effectiveness of the model
- Summer Student**, Medical Physics, Northeast Cancer Centre, Health Sciences North, Sudbury, ON May 2017 – Aug. 2017
- Processed CT images to track fiducial markers during radiation treatment using MATLAB
 - Wrote quality assurance scripts in Python to analyze maintenance data and images for linear accelerators
- Analyst - Research Informatics**, Information Management Group Centre for Addiction and Mental Health, Toronto, ON Sept. 2016 – Dec. 2016
- Designed and developed a user interface for integration with the CAMH Neuroinformatics Platform using a Drupal 8 implementation
 - Set up a development environment on a CentOS virtual machine
 - Created comprehensive reference documentation
- Java Developer**, Shared Information Management Services, University Health Network, Toronto, ON Jan. 2016 – Apr. 2016
- Designed and implemented user interface for clinical alerting application using Java, ClojureScript and WebSphere
 - Analyzed existing user interfaces to create an optimal design
 - Developed detailed reference documentation

PUBLICATIONS

Kanav Vats, Mehrnaz Fani, **Pascale Walters**, David Clausi, John Zelek, [Event detection in coarsely annotated sports videos via parallel multi receptive field 1D convolutions](#), CVSports, June 2020.

Pascale Walters, David Clausi, Alexander Wong, [Sports field localization using memory networks](#), Journal of Computational Vision and Imaging Systems, 5:1, Nov. 2019.

Ernest Osei, **Pascale Walters**, et al., [A review of predictive, prognostic and diagnostic biomarkers for brain tumours: towards personalized and targeted cancer therapy](#), Journal of Radiotherapy in Practice, Nov. 2019.

Allen W. Zhang, Ciara O’Flanagan, Elizabeth A. Chavez, Jamie L. P. Lim, Nicholas Ceglia, Andrew McPherson, Matt Wiens, **Pascale Walters**, et al., [Probabilistic cell-type assignment of single-cell RNA-seq for tumor microenvironment profiling](#), Nature Methods 16:1007-1015, Oct. 2019.

AWARDS AND SCHOLARSHIPS

- Finalist**, Hack the North, Waterloo, ON Sept. 2019
- Engineering Excellence Master’s Fellowship**, University of Waterloo, Waterloo, ON May 2019 – Apr. 2020
- President’s Research Award**, University of Waterloo, Waterloo, ON Sept. 2018,

Sept. 2017