

Collin A. Joseph

✉ collin.quintyne@gmail.com • 🌐 collinquintyne.github.io • 📷 collinquintyne

Summary

- Proficient in **C++** with experience using **OpenCV**.
- Proficient in **Python** with experience using **Tensorflow**, **Keras** and **scikit-learn**.
- Substantial knowledge of **machine learning** and **digital signal processing** from work and research.
- Substantial knowledge of **optimization** and **algorithm design** from research and coursework.

Education

Coursera

Deep Learning Specialization

Online

Sept. 2019

- A 5-course specialization by deeplearning.ai on Coursera.
- Completed **Python**-based assignments using **Tensorflow** and **Keras** to implement deep learning architectures.
- Relevant Coursework: Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models

McGill University

Masters of Engineering in Electrical Engineering (with thesis)

Montreal, Quebec, Canada

2017–2019

- Graduation Date: 29th October 2019
- Relevant Coursework: Applied Machine Learning, Optimization, Generalized Linear Models

University of Waterloo

Bachelor of Applied Science in Electrical Engineering (with co-op)

Waterloo, Ontario, Canada

2012–2017

- Graduated with distinction.
- Relevant Coursework: Adaptive & Cooperative Algorithms, Algorithm Design & Analysis, Digital Signal Processing

Research Experience

McGill University

Master's Thesis

Montreal, Quebec, Canada

2017–2019

Research was focused on statistical analysis, signal processing and development of **machine learning** algorithms for microwave radar breast cancer screening system with McGill RF Breast Cancer Screening Group.

- Implemented **ensemble cost-sensitive SVM** classifier for microwave radar scans using **Python**.
- Reduced ensemble training time using genetic algorithms, particle swarm optimization and simulated annealing.
- Improved predictive performance by proposing new time-frequency decomposition features.

Technology Used: Python (scikit-learn, matplotlib), Matlab, Git, Linux

Work Experience

wrnch AI

Developer, Production Team

Montreal, Quebec, Canada

Nov. '19 – Mar. '20

- Expanded functionality of **computer vision** inference server using **C++**.
- Automated data pre-processing pipeline and model benchmarking using **Python**.
- Collected and curated data to improve **computer vision** model performance.

Technology Used: C++, Python, OpenCV, Git, Linux

ON Semiconductor**Waterloo, Ontario, Canada***Signal Processing Algorithm Developer (co-op)**Sept.'16 – Dec.'16*

- Prototyped an environmental classification algorithm for low-resource digital hearing-aids.
- Optimized an acoustic noise reduction algorithm extensively, improving (decreasing) power consumption by 20%.
- Leveraged fixed point arithmetic operations to maximize algorithm efficiency.

Technology Used: Matlab, Assembly Language, Jira, CVS version control**ON Semiconductor****Waterloo, Ontario, Canada***Signal Processing Algorithm Developer (co-op)**Jan.'16 – Apr.'16'*

- Developed a digital equalizer firmware module in assembly language.
- Simulated and performed experimental analysis on digital equalizer using Matlab.
- Executed and documented extensive test procedures for acoustic feedback cancellation algorithm.
- Documented and presented analysis and test results to firmware and software development team.

Technology Used: Matlab, Assembly Language, Jira, CVS version control**ON Semiconductor****Waterloo, Ontario, Canada***Signal Processing Algorithm Developer (co-op)**May'15 – Aug.'15*

- Evaluated performance of an static noise reduction algorithms using Matlab.
- Developed functional simulations to evaluate performance of various digital signal processing algorithm configurations.
- Performed experimental analysis on multiple noise estimation methods for enhancement of noise reduction algorithm.
- Developed and executed automated acoustic tests for directional noise reduction algorithm using Matlab & C.

Technology Used: Matlab, Assembly Language, C, Jira, CVS version control**University of Waterloo****Waterloo, Ontario, Canada***Research Assistant, (4 months full-time, 4 months part-time)**Jan'14–Aug.'14*

- Developed and evaluated a ray tracing simulation tool for radio wave propagation using C++ and Matlab.
- Reduced runtime by over 60% using CUDA parallel computing platform on Nvidia GPU hardware.
- Designed an electromagnetic simulation GUI using Matlab.

Technology Used: C++, Matlab, Windows

Volunteer Experience**Couple Six Inc.****Bridgetown, Barbabdos***Developer**Jan.'15 – Jul.'15*

- Collaboratively developed adventure game prototype using Unity game engine and C# scripting.
- Coordinated development remotely with project team using Git version control.

Technology Used: C#, Unity, Git, Windows

Awards**Faculty of Engineering, University of Waterloo****Waterloo, Ontario, Canada***Sandford Fleming Foundation Award, Co-op Proficiency**Jul.'17*

For outstanding performance during co-op work terms.

Faculty of Engineering, University of Waterloo**Waterloo, Ontario, Canada***Sandford Fleming Foundation Award, Work Report Proficiency**Jul.'16*

For excellence in written communication.

Hobbies & Interests

- Interest in video game design and development
- Athletics and martial arts enthusiast.