

Evan Loughlin

Software Engineer - Machine Learning



About Me

Experienced Software Engineer with a strong Machine Learning background. I love working on cool, challenging problems and continuously expanding my mind.

📍 Canada 🇨🇦 / Remote

Areas of Specialization

Machine Learning
• Artificial Intelligence
• Software Engineering
• Data Analytics

Interests

Scientific Computing
• AI Ethics
• Algorithms
• History
• Rock Climbing
• Outdoors

e-loughlin

eloughlin

Portfolio

evan.m.loughlin@gmail.com

+1-587-433-3826

COMPUTER SCIENCE

2022-2024

Software Engineer / Data Analytics

HIGHLIGHT · New York, NY / Remote 📍

Full stack software engineering and Machine Learning for Marketing Tech Startup. Developed Live Dashboard for marketing and analytics, supporting 50,000 users. Lead efforts in Data Analytics team, developed ML models (Random Forest), and a unique Genetic Algorithm solution.

Typescript **C#** **React** **Go** **Microservices** **Terraform** **AWS**
Machine Learning **Python** **SKLearn** **PyTorch** **PostgreSQL**



2021-2022

Modeling and Simulation Engineer (R&D)

CERIO · Ottawa, ON / Remote 📍

R&D - High Performance Computing Networks. Developed tools for data analytics, conducted experiments, simulations, and visualizations.

Python **Machine Learning** **Anaconda** **Data Visualization** **Python**
SKLearn **Go**



2019-2020

Software Engineer

CIRCLE CARDIOVASCULAR IMAGING · Calgary, AB 📍

Developed software for CVI42 (MRI Cardiovascular Imaging) - using SIMD Vectorization libraries for CPU Optimization. Used Convolutional Neural Networks for detecting cardiovascular irregularities and delineating anatomical regions.

C++ **CPU Optimization** **Computer Vision** **Machine Learning**
Medical Imaging **Go**



2018-2019

Software Engineer

LOCKHEED MARTIN · Calgary, AB 📍

Developed mission-critical systems for UAVs (military drones) using C++, Qt, and Python. Practiced TDD and clean architecture techniques.

Qt **Python** **Robotics** **SQL** **Test Driven Development**



EDUCATION

MSc Computer Science - Machine Learning / AI
2019-2024
GEORGIA INSTITUTE OF TECHNOLOGY · GPA: 3.6 / 4.0 🏛️



BSc Computer Science
2016-2018
UNIVERSITY OF CALGARY · GPA: 3.4 / 4.0 🏛️



BSc Civil Engineering
2007-2012
UNIVERSITY OF CALGARY · GPA: 3.4 / 4.0 🏛️



International Exchange
2011
UNIVERSITÄT STUTTGART · Computational Mechanics of Materials (COM-MAS) 🏛️



SKILLS

Python / Anaconda

Go, C#, C/C++

ML Algorithms

Javascript / Typescript

AWS

DESIGNATIONS

2021 Professional Engineer (APEGA)

LANGUAGES

English | C2
German | B1

Native
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PROGRAMMING LANGUAGES

Python **C** **C++** **C#** **Go** **Javascript** **Typescript**
Java **LaTeX** **Nix** **Bash** **Arduino**

FRAMEWORKS & TOOLS

SKLearn **PyTorch** **React** **Docker**
Kubernetes **Node** **Qt** **Go** **GraphQL**
Google Test **CMake** **Jenkins** **Docker**
PostgreSQL **Hasura** **Github Actions**
Neovim **Unity**

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CIVIL ENGINEERING

2012–2016

Various Roles - Civil / Structural Engineering

HEROLD ENGINEERING, TERRA HDD, JACOBS ENGINEERING · 

Worked on structural and geotechnical engineering projects, including oil & gas facilities, bridges, buildings, pipeline crossings, and more. Involved in engineering, project management, inspections, and data analysis.

Steel

Wood

Concrete

Foundations

Finite Element Analysis

Earthquake Design

Geotechnical Engineering

Project Engineering



COURSEWORK

Research Paper	University of Calgary: A Multi-Agent Simulation Framework for Studying Autonomous Vehicle Behaviour and Intelligent Transportation Networks Developed a simulation framework using Unreal Engine 4 (UE4) to study transportation network behavior involving autonomous and human-driven vehicles. The framework includes behavior trees and various parameters (behavioral, perception, physical) to model agent behavior.
CS7641	Machine Learning Supervised, Unsupervised Learning, Reinforcement Learning
CS6475	Computational Photography Convolutions, image and signal processing, edge detection, pyramids, Fourier transforms. OpenCV, NumPy, Python, TensorFlow
CS6601	Artificial Intelligence A.I. course focused on AI: A Modern Approach (Peter Norvig). Modules include A.I. Game Playing (Minimax / Alpha-Beta Pruning), Search (A*, Bi/Tri-Directional), Simulated Annealing, Constraint Satisfaction, Probability, Bayes Nets, Pattern Recognition, and Machine Learning.
CS7638	A.I. for Robotics Kalman Filters, Particle Filters, A* Search, PID Controllers, and SLAM (Simultaneous Localization and Mapping)
CS7637	Knowledge-Based Artificial Intelligence Python (NumPy and PILLOW libraries) AI agent developed to solve Raven's Progressive Matrices (a type of problem within some IQ tests).
CS7646	Machine Learning for Trading Machine learning for financial trading, including Pandas, Bayes Theorem, Probabilistic Machine Learning, Hedge Funds, Market Indicators, Q-Learning, Reinforcement Learning
Computational Mechanics	Stuttgart University (Germany) Completed several master's courses during an international exchange at Stuttgart University's (Germany) COMMAS program; topics included numerical methods, computational mechanics of geomaterials and steel, thermodynamics, environmental particle dispersion, and vector calculus.

PROJECTS

acku.org	All Canadian Karate Union - Website Wordpress website I developed and maintain, on a volunteer, pro bono basis. I was a former instructor. Integrated Calendar and Google Maps API for all instructors to manage their own clubs.
C++ Code Generator	https://github.com/e-loughlin/CppCodeGenerator Template-based C++ Code Generator I wrote in Go, with Qt support. Open-source with over 20 Stars on GitHub. Estimated 50,000+ downloads. Helps enforce clean coding practices.
Image Organizer Tool	https://github.com/e-loughlin/image_renamer Python tool for re-naming large numbers of photos to consistent filenames based on their EXIF timestamp data. Includes options for resizing images.
Sudoku Solver	https://github.com/e-loughlin/SudokuSolver Bored on a long flight and without internet, I wrote a brute-force recursive algorithm solution to ruin the fun of any Sudoku puzzle, in C++.