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 🇨🇦
Australia 🇦🇺
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

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+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. `C++` `Qt` `Python` `Robotics` `SQL` `Test Driven Development`

Education

2019–2024
MSc Computer Science - Machine Learning / AI
Georgia Institute of Technology · GPA: 3.6 / 4.0 🏛

2016–2018
BSc Computer Science
University of Calgary · GPA: 3.4 / 4.0 🏛

2007–2012
BSc Civil Engineering
University of Calgary · GPA: 3.4 / 4.0 🏛

2011
International Exchange
Universität Stuttgart · Computational Mechanics of Materials (COMMAS) 🏛

Skills

- Python / Anaconda
- Go, C#, C/C++
- ML Algorithms
- Javascript / Typescript
- AWS

Designations

2021 Professional Engineer (APEGA)

Languages

English	C2	Native
German	B1	● ● ○ ○

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++.