# 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





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### 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 so-

lution. 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

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

LOCKHEED MARTIN · Calgary, AB 💡

**Software Engineer** 

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** MSc Computer Science - Machine Learning / Al

2019-2024

2018-2019

GEORGIA INSTITUTE OF TECHNOLOGY · GPA: 3.6 / 4.0 🏛

**BSc Computer Science** 

University of Calgary 2016-2018

GPA: 3.4 / 4.0 mm

UNIVERSITY OF CALGARY

### **BSc Civil Engineering**

2007-2012

University of Calgary . GPA: 3.4 / 4.0 mm



### International Exchange

Universität Stuttgart . Computational Mechanics of Materials (COM-MAS) m



# Universität

### SKILLS

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

### DESIGNATIONS

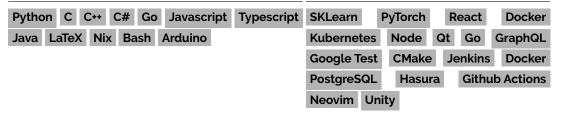
2021 Professional Engineer (APEGA)

### LANGUAGES

English C2 Native German В1 

### Programming Languages

### Frameworks & Tools























### **Evan Loughlin**

Software Engineer
• Machine Learning

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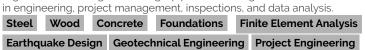
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### CIVIL ENGINEERING

### 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





### Coursework

Research	University of Calgary: A Multi-Agent Simulation Framework for Studying Autonomous
Paper	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
007044	model agent behavior.
CS7641	Machine Learning
	Supervised, Unsupervised Learning, Reinforcement Learning
CS6475	Computational Photography
	Convolutions, image and signal processing, edge detection, pyramids, Fourier trans-
	forms. 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), Simu-
	lated 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, Probabilis-
	tic Machine Learning, Hedge Funds, Market Indicators, Q-Learning, Reinforcement
	Learning
Compu-	Stuttgart University (Germany)
tational	Completed several master's courses during an international exchange at Stuttgart Uni-
Mechan-	versity's (Germany) COMMAS program; topics included numerical methods, computa-
ics	tional 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	https://github.com/e-loughlin/CppCodeGenerator
Genera-	Template-based C++ Code Generator I wrote in Go, with Qt support. Open-source with
tor	over 20 Stars on GitHub. Estimated 50,000+ downloads. Helps enforce clean coding
	practices.
Image	https://github.com/e-loughlin/image_renamer
Organizer	Python tool for re-naming large numbers of photos to consistent filenames based on
Tool	their EXIF timestamp data. Includes options for resizing images.
Sudoku	https://github.com/e-loughlin/SudokuSolver
Solver	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++.