Evan **Loughlin**

Software Engineer - Machine Learning



About Me

Software engineer with backgrounds in Computer Science (Machine Learning) and Civil Engineering.

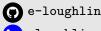
> ♥ Canada [] / Remote

Areas of Specialization

Machine Learning Artificial Intelligence Software Engineering · Data Analytics

Interests

Scientific Computing · Al 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 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 SKLearn 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 Anaconda Data Visualization Machine Learning Python SKLearn Go

2019-2020 **Software Engineer**

CIRCLE CARDIOVASCULAR IMAGING · Calgary, AB 9

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 C++

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

MSc Computer Science - Machine Learning / Al

GEORGIA INSTITUTE OF

2019-2024 TECHNOLOGY · GPA: 3.6 /

BSc Computer Science

University of Calgary . 2016-2018

GPA: 3.4 / 4.0 🏦

BSc Civil Engineering

University of Calgary . 2007-2012 GPA: 3.4 / 4.0 🏛

International Exchange

Universität Stuttgart · Computational Mechan-2011 ics of Materials (COM-MAS) 🏦

Universität Stuttgart

SKILLS

Python / Anaconda

Go, C#, C/C++

ML Algorithms

Javascript / Typescript

DESIGNATIONS

2021 Professional Engineer (APEGA)

LANGUAGES

C2 **English** Native German В1 • • •

Programming Languages

Frameworks & Tools

Python C C++ C# Go Javascript Typescript React Docker Kubernetes Node Qt Java LaTeX Nix Bash Arduino GraphQL Google Test **CMake** Jenkins Docker **PostgreSQL** Hasura Github Actions Neovim Unity





















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• Machine Learning

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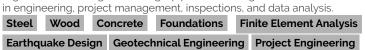
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CIVIL ENGINEERING

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++.