(778) 237-5533
keeganmjgreen@gmail.com
Ottawa, ON

KEEGAN GREEN

MOTIVATED · ADAPTABLE · DEPENDABLE

SKILLSET

Software Engineering

- Programming languages: C/C++, Java, proficient Golang
- Scripting languages: Bash, proficient Python
- Linux
- CI/CD test infrastructure
- Git and AI-assisted code reviews
- Machine learning

Electrical Systems

- Microcontrollers and single-board computers
- Digital design
- Real-time systems

WHERE I EXCEL

- Showing initiative in end-to-end problem solving, from conception to deployment
- Creating reusable, well-tested, and fast software
- Considering all aspects of a problem, from technical to end-user implications

EXPERIENCE

Optimization Engineer 2022 – Present
BluWave~ai Ottawa, ON

- Developed, deployed, and maintained an optimization service to reduce strain on the electrical grid by controlling grid-scale batteries and hundreds of EVs, for an ongoing EV Everywhere program with Hydro Ottawa
  - Created an algorithm that controls EVs' charging to consume power when the energy mix is green
- Developed and deployed software to optimally control a solar-powered hydrogen production and storage system, extending its component lifespan while generating electricity from green hydrogen at high-demand times
- Collaboratively developed and deployed a cloud service that sends timely and helpful charging station recommendations to EV taxi drivers based on location
  - Helped progress the pilot project with the taxi company to the next stage by creating a real-time simulator of EV taxi fleet operations, showcased at COP28
- Developed and deployed prototype optimizers of electric bus charging operations for multiple transit agencies in simulation
  - Created optimization models for peak-shaving and energy cost minimization in a model predictive control scheme, used in a simulation study for many Ontario school bus depots
- Created a library used by multiple projects for testing smart grid control software in a variety of simulated environments
- Co-inventor on five patents, including for the real-time, data-driven minimization of cost and greenhouse gas emissions with EV charging stations

Systems Engineering Co-op Sep – Dec 2020
Jastram Engineering Vancouver, BC

- For steering systems on naval frigates:
  - Streamlined the tracking of engineering requirements, helping to raise customer value by ~$20K
  - Developed documentation for security, safety, risk management, and failure analysis
  - Verified conformance of electrical systems to NATO standards
  - Successfully performed vibration analysis for hydraulic power units in Python
- Built a ship steering test console using embedded C++ and integrated it with an autopilot system

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EDUCATION

BASc Mechatronic Systems Engineering 2016 – 2021
Simon Fraser University Vancouver, BC

- 3.67 CGPA; President's Honour Roll, three-time Dean's Honour Roll
- Extensive coursework on electrical engineering and embedded systems

PERSONAL PROJECTS

IoT Integration of a Hydroponic Farm (C++, Linux, Python) 2022 – 2023

- Integrated a single-board computer and microcontroller with a variety of sensors and actuators via I2C and UART
- Created an IoT dashboard and Python-based interface for remote monitoring & control
- Completed the first phase on-time to successfully control the farm across Canada

Circuit simulator Jan – March 2025

- Software for simulating electronic circuits

How Phasors Work October 2025 – Present

- A modern electrical engineering textbook

Author of Multiple Python Libraries 2024 – Present

- Applications span signal resampling, Pandas/dataclasses interoperability, and ease of writing explainable, traceable, and auditable Python programs

Simulation of Mid-Air Refueling of a Hydrogen-Powered Airliner 2023 – Present

- Design and feasibility study determining how to refuel a sustainably-powered commercial airliner
- Developed a 3D computer simulation of mid-air refueling by cargo UAVs

Cluedo Game Simulator and AI Assistant 2023

- Wrote software guaranteed to beat human players at Cluedo by solving the game as a Boolean satisfiability problem
- Made an interactive player dashboard to visualize game and simulation results

Model of Fuel Cell EV Air Supply System for Optimization 2020

- Identified the potential for optimization among car manufacturers
- Defined an empirical relationship between fuel cell humidity and performance
- Numerically modeled turbo compressor to feed fuel cell oxygen