KEEGAN GREEN

MOTIVATED · ADAPTABLE · DEPENDABLE

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

SKILLSET

Software Engineering

- **Python**
- **OOP**
- **Testing** · unittest, pytest, automated integration testing
- Go
- Basic C/C++
- Basic Java
- Matlab and Simulink
- Git
- Linux and Docker
- Cloud-based CI/CD · GitHub Actions, Jenkins

Control Systems

- Modern optimal and digital control
- Modeling and simulation

Electrical Systems

- Power and signal electronics analysis
- Digital design
- Microcontrollers and single-board computers
- Real-time systems

WHERE I EXCEL

- Showing initiative in end-to-end problem solving, from conception to deployment
- Creating well-documented, 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 a Python-based service to control networks of grid-scale batteries and hundreds of EVs, to reduce strain on the Ottawa electrical grid
- Created a simulation sandbox for testing our smart grid software systems in a variety of simulated environments
  - Successfully used for end-to-end testing and for validating long-term performance prior to controlling real devices
  - Exposed an API for interoperability with the software under test
- Developed and deployed software in Python to optimally control a solar-powered hydrogen generation and storage system, to improve system efficiency and the reliability of energy production
- Collaboratively developed, and deployed, a Python cloud service that sends timely and helpful charging station recommendations to EV taxi drivers based on location
  - Created a real-time simulator of EV taxi fleet operations, showcased at COP28, essential to progressing the pilot project with the taxi company to the next stage
- Developed prototype optimizers of electric bus charging operations for multiple transit agencies in both simulation and real-world deployment
  - Used Python to create optimization models for minimizing energy use and cost
- Created and deployed software for predicting the load of Mumbai and PEI electrical grids, outperforming the baseline model by 17%
- Co-inventor on five patents

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

- For steering systems on naval frigates:
  - Developed documentation for security, safety, risk management, and failure analysis
  - Verified conformance of electrical systems to NATO standardization agreement
  - 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 (Python, C++, Linux)   2022 – 2023

- Integrated a Raspberry Pi and microcontroller with a variety of sensors and actuators
- 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

DecisionTracker (Python)   June 2025 – Present

- Library providing syntax for writing explainable, traceable, and auditable Python programs, accompanied by a web GUI

Papaya (Python)   May 2025 – Present

- Library for interoperability between Pandas dataframes and dataclasses

Constrained Node Allocation Balancer (Python)   Feb 2025 – Present

- Library providing an algorithm for balancing network flows, from internet traffic to the electrical grid

Circuit simulator (Python)   Jan 2025 – Present

- Library for simulating electronic circuits

SignalPerfect (Python)   2024

- Library for high-performance signal resampling

Simulation of Midair Refueling of a Hydrogen-Powered Airliner (Python)   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 AT200 cargo UAVs

Cluedo Game Simulator and AI Assistant (Python)   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

Energy Yield Model of a Gas Turbine (Python)   2021

- Performed statistical analysis and trained machine learning models on sensor data
- Verified, visualized, and reported model performances