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

KEEGAN GREEN

MOTIVATED · ADAPTABLE · DEPENDABLE

SOFTWARE SKILLS

- **Python**
- **Data modeling** · Pydantic, Protobuf, XML, YAML, JSON & JSON Schema etc.
- **Testing** · unittest, pytest, automated integration testing
- Optimization
- Go
- Basic Java
- Git
- Linux
- Docker
- CI/CD and automated test execution

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 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 a REST 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

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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

PERSONAL PROJECTS

Constrained Node Allocation Balancer (Python) Feb 2025 – Present

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

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

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

IoT Integration of a Hydroponic Farm (Python) 2022 – 2023

- Created IoT dashboard and Python-based interface for remote monitoring & control
- Developed a farm process model for minimizing consumption of energy and resources
- Completed the first phase on-time to successfully control the farm across Canada

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