Jacob (Jake) Waldner

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Education

Dalhousie University — Halifax, NS
Bachelor of Computer Science (Co-op) — *Sept. 2023 – Sept. 2027*

- Achieved 3.86/4.3 GPA

Technical Skills

Languages: Python, JSX, JavaScript, HTML/CSS, JSON, Java, C/C++, MySQL, PHP
Frameworks: React, Material UI, Node.js, Express.js, Vue.js, Flask, FastAPI, Bootstrap, Sequelize, Streamlit
Developer Tools: Git, Github, Postman, VS Code, PyCharm, IntelliJ, Jupyter Notebooks, Auth0, Vite, REST APIs
Amazon Web Services: ALS, Athena, EC2, IAM, Lambda, S3, Sagemaker AI, SES
Libraries: Leaflet, Plotly, NumPy, Matplotlib, Polars, Pandas, JUnit, Recharts
Operating Systems: Fedora, macOS, Ubuntu, Amazon Linux, Pop!_OS, Windows 10/11
Certifications: Python 3 Programming Specialization (University of Michigan)

Experience

Junior Software Developer (Co-op) — May 2025 – Dec. 2025
Glas Ocean Electric — *Halifax, NS*

- Developed the **Client Portal**, a full-stack web app utilizing vessels' low power recorders to power various features
  - **Front-end**: Built views with React and MUI featuring interactive maps with Leaflet
  - **Back-end**: Implemented 30+ API endpoints using Express.js, secured with JWT authentication via Auth0. Leveraged MySQL with Sequelize ORM for efficient data modeling, and integrated AWS service calls with Redis caching to improve performance and reduce latency.
  - **Tracking**: Displays real-time locations and metrics of vessels through Amazon Location Services
  - **Routing**: Used the A* algorithm and the H3 geospatial indexing system alongside machine learning insights and real-time weather data to facilitate a vessel trip planning system between selected points
  - **Driving Score**: A custom mathematical system for determining vessel driving score out of one hundred points using historical trip data fetched from Athena
  - **Alerts**: Implemented AWS Lambda and SES–based email alerts for speeding, fuel usage, and geofence entry/exit with user-configurable parameters
- Collaborated with ML Engineer to build SageMaker AI training pipelines using Jupyter notebooks
- Developed a data visualizer using Streamlit (Python) and AWS that allows vessel data to be viewed before/after training and conditionally retrigger training
- Renewed for a second four-month term following positive performance review

Independent Consultant in Program Design — Sep. 2022 – Aug. 2023
Scratchpad Consulting — *Halifax, NS*

- Developed a financial planner aggregation tool with Vue.js, FastAPI (Python), and the Plaid REST API
- Developed and documented an in-house data visualization library in Python using Plotly

Projects

Windlytics | *React, Leaflet, MUI, Flask, ML* — Nov. 2025

- Created in 48 hours for the 2025 Cognizant BrAInstorm Challenge hackathon, winning 2nd place ($1000)
- An offshore wind turbine simulator that projects potential revenue from energy generated intended for use with Nova Scotia's 'Wind West' project
- Developed an LGBM wind-speed forecasting Machine Learning Model, improving prediction accuracy by 15% (reduced RMSE) by training on three million date-and location-stamped records
- Designed a dashboard in React using Leafet and MUI to showcase the potential revenue based on turbine type, placement, and time duration

SimpleEQ | *C++, JUCE Framework* — Nov. 2024

- An equalizer audio plugin (VST, AU) in C++ using the JUCE Framework
- Shapes the frequency content of audio, with several different sliders for customization