

# Jacob (Jake) Waldner

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## EDUCATION

### Dalhousie University

*Bachelor of Computer Science (Co-op)*

Halifax, NS

Sept. 2023 – Present

## EXPERIENCE

### Junior Software Developer (Co-op)

*Glas Ocean Electric*

May 2025 – Dec. 2025

Halifax, NS

- Developed the Client Portal (see Projects)
- 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
- Wrote and reviewed documentation for all projects
- Renewed for a second four-month term following a 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, Python, and the Plaid REST API
- Developed and documented an in-house data visualization library in Python

## PROJECTS

### Client Portal | *React, Leaflet, MUI, Express.js, MySQL, Auth0, AWS, H3*

Sept. 2025 – Dec. 2025

- A full-stack web application that utilizes data from Glas Ocean Electric's clients' low power recorders to provide unique features divided into separate pages:
  - A 'Tracking' page that shows real-time locations and metrics of registered vessels through Amazon Location Services
  - A 'Geofence' page that enables users to draw geofences and optionally receive alerts if vessels enter/exit the specified area saved in MySQL
  - A 'Routing' page that uses the A\* algorithm and the H3 geospatial indexing system alongside machine learning insights for vessel trip planning between selected points
  - A 'Day Summary' page that uses a custom mathematical system for determining vessel driving score out of one hundred points using historical trip data fetched from Athena
  - An 'Account' page that allows users to register vessels to their account and delegate vessels to other users
- Implemented AWS services Lambda, Simple Email Service to send email updates to users
- Implemented Auth0 for user management and JSON Web Tokens
- Implemented Sequelize ORM to model relational data and manage MySQL operations in the Express.js backend
- Hosted on an AWS EC2 instance

### Windlytics | *React, Leaflet, MUI, Flask, ML*

Nov. 2025

- 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 Leaflet and MUI to showcase the potential revenue based on turbine type, placement, and time duration
- Created in 48 hours for the 2025 Cognizant BrAInstrom Challenge hackathon, winning 2nd place (\$1000)

### SimpleEQ | *C++, JUCE Framework*

Nov. 2024

- An equalizer audio plugin (VST, AU) in C++ using the JUCE Framework

## 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, Bootstrap, Sequelize, Streamlit

**Developer Tools:** Git, Postman, VS Code, PyCharm, IntelliJ, Jupyter Notebooks, Auth0

**Amazon Web Services:** ALS, Athena, EC2, IAM, Lambda, S3, Sagemaker AI, SES

**Certifications:** [Python 3 Programming Specialization \(University of Michigan\)](#)