

VINCENT LIU

236-518-1557 | vwl29@sfu.ca | vincent-wz-liu | vinn03 | vinn03.dev

EDUCATION

Simon Fraser University

BSc. Computing Science (Geographic Information Science Major), 3.67/4.33 GPA

EXPECTED APR 2026

Burnaby, BC, Canada

- **Selected Coursework:** Data Structures/Algorithms, Database Systems, Web Development, Computational Data Science, Affective Computing, Visual Computing, Geographic Information Science, Remote Sensing, Spatial Data Analysis/Modeling

EXPERIENCE

Software Engineer Intern @ GeoComply - Machine Learning Products team

SEP 2025 - PRESENT

PySpark, Python, SQL, Databricks

Vancouver, BC, Canada

- Designed and implemented a geospatial fraud-detection ML pipeline, containing a PySpark-driven **plugin architecture**, supporting **modular scoring workflows**, **configurable customer insights**, and processing of **100k+ records per day**.
- Integrated the pipeline into a gRPC API, **delivering model results** directly to **customer dashboards**.

Software Engineering Intern @ Apple Inc. - Maps team

MAY 2025 - AUG 2025

React, Redux, TypeScript, MapKit JS, Deck.gl

Cupertino, CA, USA

- Merged open-source updates of Kepler.gl, containing new features such as **DuckDB** and an **AI Assistant**, into the internal Apple-adapted version of the tool.
- Refactored Kepler.gl's open-source codebase into **modular, importable components** to integrate with a proprietary geospatial visualization platform, ensuring **long-term maintainability** with future Kepler releases.
- Developed a plugin that **connected** Kepler.gl's visualization features with the platform's **state management** and **persistence** systems, enabling general-purpose, self-service data exploration and analysis.

Software Engineering Intern @ Apple Inc. - Maps team

MAY 2024 - AUG 2024

React, Redux, TypeScript, MapKit JS, Deck.gl

Cupertino, CA, USA

- Integrated Apple's MapKit JS into Kepler.gl, an industry-leading **open-source** tool for the geospatial analysis of large datasets.
- Enhanced the application with advanced 2D-3D visualizations, side-by-side map views, and custom Apple-themed visualization palettes in **collaboration with design teams**.
- Developed and executed an integration plan to **refactor** existing mapping frameworks using the **adapter** design pattern, enhancing the **scalability**, **maintainability**, and **API extensibility** of the application.
- Managed weekly deliverables, put the application into **production**, and presented the application to Leadership, demonstrating **performance improvements**, enhancements to **codebase architecture**, and refined **visual design**.

PERSONAL PROJECTS

DWELLIGENCE

OCT 2025

React, Tailwind, Google Maps React SDK, Google Gemini 2.5 Flash, Google Maps API, Node.js, Express, PostgreSQL

CalHacks 12.0

- Developed a **real estate search platform** that overlays commute intelligence onto property listings across the Bay Area, enabling users to evaluate housing by travel time to their workplace across four transport modes.
- Designed an **interactive map interface** with **debounced viewport queries**, **commute visualizations**, and **dynamic amenity overlays** using the Google Maps React SDK.
- Built an "Ask AI" feature, leveraging Google Places API and Gemini, to **answer natural-language questions about nearby POIs** for any listing, with numbered map markers for reference.
- Implemented Uber's H3 spatial indexing at three resolutions to enable **O(1) neighborhood amenity lookups** across 8 categories, replacing expensive geospatial distance calculations.

OBJJUG

MAY 2024

React, JavaScript, Tailwind, Python, Flask, OpenAI API, Gmail API, MongoDB

StormHacks 2024

- Created a job application tracker that **automatically categorizes** applications into their respective hiring-process stages.
- Used the **Gmail API** to extract job application emails, and then provided them to the **OpenAI API** for **classification**.
- Built a **REST API**, using Python and Flask, to store users and their tracked job applications in a **MongoDB database**.
- Implemented a **dashboard** that displays and sorts categorized job applications into three columns, with each column representing a hiring-process stage.

TECHNICAL SKILLS

Web: JavaScript, TypeScript, HTML/CSS, Tailwind, React, Redux, Node.js, Express, MapKit JS, Google Maps API, Deck.gl

Data & ML: Python, SQL, PySpark, Pandas, Polars, Flask, MongoDB, PyTorch, Scikit-learn, GeoPandas