Vincent Liu

📞 236-518-1557 ✉️ vwl29@sfu.ca 💼 vincent-wz-liu 🐙 vinn03 🌐 vinn03.dev

Education

Simon Fraser University   **EXPECTED APR 2026**
BSc. Computing Science (Geographic Information Science Major), 3.65/4.33 GPA   *Burnaby, BC, Canada*
- **Selected Coursework:** Data Structures, Database Systems, Web Development, Computational Data Science, Affective Computing, Visual Computing, Geographic Information Science, Remote Sensing, Spatial Data Analysis/Modeling

Experience

GeoComply - Data Science Intern @ Machine Learning Products   **SEP 2025 - PRESENT**
PySpark, Python, SQL, Databricks   *Vancouver, BC, Canada*
- Refactored a customer-facing SQL pipeline into a **modular, scalable architecture** using PySpark, making it over **3x faster**.

Apple Inc. - Software Engineering Intern @ Maps   **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.

Apple Inc. - Software Engineering Intern @ Maps   **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 geo-spatial analysis of large datasets.
- Enhanced the application with advanced 2D-3D visualizations, split 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

MOODMIRROR 🐙   **JAN 2025**
Swift, Agora, Python, Flask, TensorFlow, OpenCV   *nwHacks 2025*
- Developed a **cross-platform** Swift app to infer emotions from facial expressions captured through video calls or the device camera, using a TensorFlow **ML model** hosted on a Flask server.
- Integrated the Agora SDK to support **one-on-one video calling**, enhancing real-time interaction capabilities between clients.
- Designed an **ML pipeline** to classify facial expressions into emotional categories, displaying results on the client.
- Created a **REST API** for the communication between the client and server, facilitating classification delivery within seconds.

JOBJUG 🐙   **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

Languages: JavaScript, TypeScript, HTML/CSS, Python, SQL
Technologies/Frameworks: React, Redux, Deck.gl, MapKit JS, Node.js, Express, Flask, Pandas, GeoPandas, Polars, PySpark, PyTorch, Scikit-learn, SciPy, MongoDB, QGIS