

Philbert Lou

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Education

University of Waterloo — Bachelor of Software Engineering

2020 - 2025

3.8 GPA | 87% Cumulative Average

Skills

Languages: Python, Javascript, Typescript, C, C++, Java, C#, Dart

Technologies: Firebase, React, Node, Stripe, Express, Django, Flutter, MongoDB, Microsoft Azure

Experience

TD Bank — Innovation Lab Software Developer

Waterloo, ON | January 2022 - April 2022

- Deployed a distributed collaborative drawing canvas application by formulating a conflict-free replicated data type, utilizing **GUN** peer-to-peer graph database, and using **React** to deliver drawing data to all active users in real-time
- Developed an AI idea generation tool using **OpenAI's GPT-3** and **Firebase Cloud Functions** that creates and stores potential project ideas based on user-inputted topics into **Firestore database**
- Designed a mobile application following the material design pattern in **Dart** using **Flutter** framework

PerkUp — Software Developer

Waterloo, ON | May 2021 - August 2021

- Built client-requested frontend features by utilizing **React** in **Javascript** and patched critical user-facing bugs such as users being able to create duplicate Stripe credit cards, cutting virtual card issuing costs by 50%
- Revamped the backend monetary management system to support flexible Stripe authorization and transaction assignments towards users' budgets using **Typescript**, **Firebase Cloud Functions**, and **Firestore Database**, increasing users' spending power by up to 100%
- Introduced platform security by implementing **Firebase Authentication**, **Firestore Rules**, and **Google Secrets Manager** to prevent unauthorized access to over 400 users' private documents
- Improved developer environment by dynamically enabling and disabling Stripe webhooks, reducing their error rates by 60% and preventing developers from losing Stripe services due to high error rates

Projects

Essential

github.com/PhilbertLou/Essential

- Created a secure, health-centric RESTful API using **Node** and **Express** for users to continuously track their water and sugar intake, set goals and restrictions, and build healthy habits
- Utilized **Passport.js** and **bcrypt** to authenticate users and to encrypt passwords stored in **MongoDB**
- Constructed a responsive and user-friendly client interface using **Bootstrap** and dynamically rendered web components using **React**, providing users with their latest data at all times

Clothing Forecast

github.com/PhilbertLou/ClothingForecast

- Engineered a neural network using **TensorFlow** libraries in **Python** that predicts what a user should wear given local weather conditions and temperature
- Created 6937 rows of data to initially train the network using a supervised learning approach and continuously updated it with user data, resulting in more personalized clothing predictions over time
- Developed the frontend with **HTML**, **CSS**, **Javascript**, and **Bootstrap**, and used **Django** for the backend