

Ri Hong

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EDUCATION

University of Waterloo

Bachelor's of Computer Science (Co-op) • 2022 – 2027

- 84% Cumulative Average

WORK EXPERIENCE

Microgreen Solar Corp.

Software Developer | Toronto, ON | Fall 2023

- Spearheaded and meticulously documented a full-stack AWS Cloud project, from design to deployment, for processing EnergyPak lithium battery data
- Utilized AWS services including API Gateway, Lambda, DynamoDB, IoT Core, and Amplify, enhancing project functionality and reliability
- Implemented a Progressive Web App (PWA) frontend with Next.js, optimizing navigation with page routing and Server-Side Rendering (SSR)
- Dramatically reduced data retrieval latency and operational costs by **318%** through effective use of browser indexedDB caching
- Developed a C++ object-oriented program for ESP32, enabling efficient data reading from a Battery Management Systems (BMS)
- Engineered a C-based HMI GUI for battery monitoring, now actively used by **100+ customers**

PROJECTS

[Ingredify](#)

React Native, Cohere, MongoDB | May 2023

- A mobile app that allows users to take a picture of an ingredients list, then provides extensive information about ingredients, including health effects and allergenic properties
- Cohere API used to generate descriptions, classify components, retrieve the best explanation from our MongoDB database, and provide the summary of an ingredient
- Submitted to MetHacks 2023, won **Best Use of Cohere (1 out of 35 teams)**

[Bill in Bytes](#)

React Native, Google Cloud Vision | May 2023

- A practical application designed to streamline the management of paper receipts by converting them into digital records, enabling easy tracking of expenses and simplified tax filing
- Integrated Google Cloud Vision API to incorporate optical character recognition (OCR) technology, transforming physical receipts into digital data
- Submitted to GryphHacks 2023, won **Best UI/UX** and **People's Choice** award (1 out of 20 teams)

[FlaimBrain](#)

LangChain, GPT-4, MongoDB, Flask | Oct 2023

- Engineered an AI study assistant using GPT-4 for personalized learning tools like summaries and flashcards from user-uploaded notes
- Led the RAG process architecture, integrating GPT-4 with MongoDB and Flask for the backend
- Submitted to Hack the Valley 8, achieved **4th place among 80 teams**

[TrailGuide](#)

Google PaLM, Infobip, FastAPI | Nov 2023

- Created an SMS-based hiking assistant delivering real-time weather updates, safety check-ins, and trip info to enhance user experience and safety
- Implemented an advanced query classification system using Google's PaLM LLM, enabling accurate and responsive user interactions
- Submitted to Hack Western 10, won **Best Use of Infobip (1 out of 15 teams)**

SKILLS

Languages: Python, C/C++, TypeScript, JavaScript, Java, HTML, CSS, LaTeX

Technologies: React.js, Next.js, Git, AWS, Google Cloud, FastAPI, Flask, React Native, Android Studio, Arduino