

# Gordon Zhang

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## TECHNICAL SKILLS

**Languages:** JavaScript, Typescript, Python, C++, C, SQL

**Frameworks:** React, Vue.js, Node.js, Flask, Express.js, Bootstrap, TailwindCSS, Firebase

**Developer Tools:** HTML, CSS, Docker, MySQL, Postman, Git, Google Cloud, AWS

**Libraries:** NumPy, Pandas, cmath, Lodash

## EXPERIENCE

### Full-stack Developer

Sept 2024 – Present

*BLNDSPT Labs*

*Waterloo, ON*

- Directed development team through app life cycle using **Typescript**, **React**, and **Node.js** to prioritize scalability, resulting in a **284%** increase in user traffic
- Enhanced checkout security by developing and integrating **RESTful** APIs and Stripe APIs webhooks with **Express** and **Node.js**, resulting in a **49%** reduction in checkout errors
- Delivered **20+** client requested features by collaborating with stakeholders, deploying prototype to production in **6** weeks
- Optimized checkout page by developing a time-sensitive discount algorithm with **Python**, boosting purchases by **23%**
- Programmed cart, checkout, and order systems with **React** to optimize transaction flow, reducing checkout time by **46%**

### Firmware Developer

Sept 2024 – Present

*UW Formula Electric*

*Waterloo, ON*

- Programmed CLI commands in **C** to control an inverter and send CAN message to modify inverter EEPROM parameters
- Developed a cooling control algorithm for a PDU, dynamically controlling fan operation based on temperature thresholds

### Software Curriculum Developer

Jan 2023 – May 2024

*ARTex Coding Society*

*Vancouver, BC*

- Co-founded a global non-profit providing free coding lessons to **900** students across **4** countries by leading curriculum design
- Programmed **50** coding puzzles in **JavaScript** and **32** RESTful API exercises, increasing classroom engagement by **212%**

## PROJECTS

**WhaleBeing** 🐳 | *JavaScript, React, Flask, Python, Azure, TailwindCSS*

### DeltaHacks 1st Place

- Developed full-stack dynamic **AI prediction model** for whale-ship collisions with **React**, **Python** and **Flask** to reduce ship strikes in coastal waters
- Built a ML model in NumPy and Pandas using boosted regression trees and satellite data to predict whale distribution
- Created and deployed **RESTful** APIs in Flask to serve real-time whale distribution and risk assessment data to the frontend
- Integrated real-time predictive whale heat-map based on ML model with Mapbox API to enhance maritime navigation
- Implemented a ship strike risk-analysis algorithm with Python and integrated Searoutes API to dynamically display routes
- Deployed backend on **Azure** using **CI/CD pipelines** with Azure DevOps for automated deployment with **99.9% uptime**

**ShakespeareAI** 🎭 | *JavaScript, React, Node.js, Firebase, Google Cloud, HTML, CSS*

- Engineered AI digital note-taking web app with **React** and **Node.js** to quiz users on their handwritten notes in real-time
- Integrated Cloud Vision API to convert handwritten notes to text and OpenAI API to generate questions, improving text recognition accuracy by **32%** compared to earlier AI pipeline designs
- Developed **Auth** system with Node.js & Firebase by integrating **RESTful** APIs for user signup and password reset
- Programmed AutoSave feature for data retrieval using Firestore Database achieving **28%** lower data retrieval latency
- Optimized cost efficiency, reducing **87%** of unnecessary Firebase writes by integrating a debounce **Lodash** delay mechanism

**BiggerPicture** 🖼️ | *Javascript, Vue.js, MySQL, Python, Flask, AWS, HTML, CSS*

- Built an interactive photo mosaic web app using **Vue.js** and **Flask**, allowing for synchronized back-end collaboration
- Managed a **MySQL** database and stored real-time user updates, optimizing performance with indexes, joins, and transaction handling, ensuring data consistency and minimizing query response time
- Implemented **WebSockets** to enable real-time communication between clients and the server for instant updates
- Integrated **Amazon S3** for scalable storage of uploaded images, enabling efficient retrieval during live collaboration

**LooLooLoo** 🐼 | *Typescript, React, Node.js, Docker, HTML, CSS*

### Hack the North Winner

- Developed a full-stack indoor navigation web app with a **React** and **Node.js** to direct users to water fountains
- Engineered shortest path algorithm for 3D indoor map using **Typescript** to show users real-time path to destination
- Containerized the backed using **Docker**, enabling seamless deployment and consistent runtime environments
- Programmed an ESP32 microcontroller using YAML to trigger Twilio API and send custom SMS notifications

## EDUCATION

**University of Waterloo**

*BASc in Computer Engineering, Honours, Co-op*

Waterloo, ON

Sept 2024 – Apr 2029