

# Gordon Zhang

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## TECHNICAL SKILLS

**Languages:** JavaScript, Typescript, Python, C++, C, Java, YAML

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

**Developer Tools:** HTML, CSS, Webpack, Docker, Postman, Git, Vercel, Bash, Figma, Jupyter, Google Cloud Platform

**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 **280%** 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 **40%**

### 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 **200%**
- Spearheaded curriculum development by developing 10 week-long lessons in JavaScript, **Java** and **Python** for **80** teachers

## PROJECTS

### ShakespeareAI 🎭

- Website | *JavaScript, React, Node.js, Express.js, Git, Firebase, GCP, Postman*
- Engineered **AI digital note-taking** web app with **React** and **Node.js** to quiz users on their handwritten notes in real-time
  - Integrated AI quizzing system using **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** API's 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
  - Leveraged **Postman** to test, document, and debug RESTful APIs, ensuring reliability of Firebase and AI integrations

### WhaleBeing 🐋

- Website | *JavaScript, Python, React, Flask, Azure, NumPy, Pandas, TailwindCSS, Git*
- Developed full-stack dynamic **AI prediction model** for whale-ship collisions with **React**, **Python** and **Flask** to reduce ship strikes in coastal waters

- Built machine learning model in **NumPy** and **Pandas** using a boosted regression tree with open source satellite data to produce a whale distribution prediction at any day of the year
- Integrated real-time predictive whale heatmap based on ML model with **Mapbox API** to enhance maritime navigation
- Implemented risk-analysis algorithm with Python in **Flask** to assess the probability of ship strikes with whales
- Deployed back-end on **Azure**, leveraging **CI/CD pipelines** with Azure DevOps for automated deployment, achieving **99.9% uptime** and streamlining deployment workflows
- Integrated ship route search feature with **Searoutes API**, dynamically displaying routes and calculating risk percentages

### LooLooLoo 🚻

*JavaScript, Typescript, React, Express.js, Node.js, Git, Docker*

Hack the North Winner 2024

- Developed a full-stack indoor navigation web app with a **React** and **Node.js** to direct users to nearby bathrooms when they drink from a water fountain
- Engineered an interactive 3D indoor map using **Typescript** to show the real-time path from user location to destination
- Programmed an ESP32 microcontroller using **YAML** to ping Bluetooth proximity of users phones every 2 seconds and send POST requests, triggering Twilio to send custom SMS notifications
- Collaborated with 3 peers to deliver a winning product out of **1000+** participants in **36** hours by effectively using **Git** to review pull requests and resolve merge conflicts

## EDUCATION

### University of Waterloo

Waterloo, ON

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

Sep 2024 – May 2029