Gordon Zhang

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TECHNICAL SKILLS

Languages: JavaScript, Typescript, Python, HTML, CSS, SQL
Frameworks: React, Node.js, Flask, TailwindCSS, Vue.js, Firebase
Developer Tools: Git, Docker, MySQL, Google Cloud, Azure, AWS, Kubernetes
Libraries: NumPy, Pandas, Lodash, OpenCV

EXPERIENCE

Full-stack Developer — Sept 2024 – Present
BLNDSPT Labs — *Waterloo, ON*
- Directed development team through app life cycle using **React**, **NodeJS**, and **Typescript** to prioritize scalability, resulting in a **284%** increase in user traffic
- Enhanced checkout security by integrating **RESTful** APIs and Stripe APIs webhooks, resulting in **49%** less checkout errors
- Delivered **20+** client requested features by collaborating with stakeholders, deploying prototype to production in **6** weeks
- Deployed containerized applications using **Docker** on **Amazon EC2**, optimizing CI/CD pipelines to automate deployment
- 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, Azure, Pandas, TailwindCSS, Mapbox API*
DeltaHacks 1st Place
- Developed AI marine navigation web app with **React**, **Flask**, and **Javascript** to reduce 20,000 whale-ship collisions
- 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, OpenAI API*
- Engineered AI digital note-taking web app with **React** and **NodeJS** to quiz users on their handwritten notes in real-time
- Integrated Cloud Vision API to analyze handwritten text and OpenAI API, boosting text recognition accuracy by **32%**
- 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

SoccerMetrics ⍟ | *Typescript, React, Docker, Flask, Kubernetes, Google Cloud, OpenAI API*
- Built a soccer analysis web app with **React**, **Flask**, and **Typescript** that analyzes uploaded videos to improve kicking form
- Extracted pose landmarks with MediaPipe GHUM for biomechanical metrics and Ultralytics YOLOv8 for ball detection
- Analyzed critical contact frames with Pandas and ball trajectories with OpenCV to calculate optimal kick angles
- Deployed application with **Docker** to containerize services, managing them with **Kubernetes** to host on **Google Cloud**
- Integrated LangChain with OpenAI API through **RESTful API** to provide personalized feedback

BiggerPicture ⍟ | *Javascript, Vue.js, MySQL, Flask, AWS*
- Built an interactive photo mosaic web app using **VueJS** and **Flask**, allowing for synchronized back-end collaboration
- Managed a **MySQL** database for real-time user updates using indexes, joins, and transactions, reducing 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*
Hack the North Winner
- Developed a full-stack indoor navigation web app with a **React** and **NodeJS** 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

EDUCATION

University of Waterloo — Waterloo, ON
BASc in Computer Engineering, Honours, Co-op — *Sept 2024 – Apr 2029*