Zhehai Zhang

📱 (+1) 226-280-8525 | ✉ z2252zha@uwaterloo.ca | 🏠 www.zhehaizhang.com | ⬛ fairnightzz | 💼 zhehai

Education

University of Waterloo *Waterloo, Ontario*
CANDIDATE FOR HONOURS COMPUTER SCIENCE WITH DIGITAL HARDWARE SPECIALIZATION *Sep. 2020 - Aug. 2025*
- 4.0 GPA (93.05%)

Skills

Programming Languages	JavaScript/TypeScript, Python, C++, C#, Java, HTML/CSS, SQL, Bash, PHP, Swift
Tools/Frameworks	AWS, Node, Express, GraphQL, React, Next.js, Vue, Docker, Microsoft Azure, MQTT, NoSQL, Nginx
Concepts	Backend/Frontend Development, Cloud Infrastructure, VR/AR, Mobile, SQL/NoSQL, Networking

Work Experience

Splunk ⬈ *Toronto, Ontario*
FULL STACK IoT ENGINEER, FLASK, NODE.JS, GRAPHQL, YOCTO, SWIFT, MQTT *May. 2022 - Aug. 2022*
- Worked on the Edge Hub, a **touchscreen IoT device** that collects industrial sensor data which is then sent to Splunk
- Implemented full stack features such as a status indicator lightring which involved the **GraphQL** and **Flask** backend with **DynamoDB** as storage, adding UI on the **iOS app**, and having the hub display the proper lightring colour
- Discovered and fixed **security vulnerabilities** with the backend, **improved 20% user interface latency** by threading endpoint calls and refactoring code in preparation for **Public Beta**
- Contributed to the migration of the product to a **Splunkbase** app to allow for simple installation, setup and versatility

D2L Corporation ⬈ *Toronto, Ontario*
SOFTWARE DEVELOPER, AMAZON AWS, TERRAFORM, MYSQL, NOSQL, MOBX, NODE.JS, REACT *Sep. 2021 - Dec. 2021*
- Provisioned production and development AWS infrastructure using **Terraform**, which narrowed **IAM** permissions by **50%** and reduced RDS timeouts by **97%**
- Refactored the backend logic of Automa2n (a workflow engine for generating activities dynamically within Brightspace)'s **Lambda** functions to be more efficient, and added scheduled and delayed actions
- Wrote tools to locally mock AWS services such as **SQS**, **DynamoDB TTL**, and **Sam** which reduced bugs and testing on development and production by a significant amount
- Built automated and dynamic CI/CD pipelines with **Github Actions**, using composite actions and reusable workflows

ToHacks ⬈ *Toronto, Ontario*
DEVELOPER, TYPESCRIPT, NODE.JS, FIREBASE (NOSQL), REACT, OPENAPI *Jul. 2021 - Present*
- Modernized the hackathon dashboard experience by adding events management and statistics pages, as well as restructuring existing code via **React**, which reduced the number of API calls by **60%**
- Implemented overall **Firebase** logic and database design for the hackathon judging web app
- Wrote tests using **Mocha** and **Chai** for **Express TypeScript** backend servers, and setup continuous delivery using **Heroku**

Bolt Bootcamps ⬈ *Canada*
TECHNICAL DIRECTOR, NODE.JS, GRAPHQL, POSTGRESQL, VUE.JS, MICROSOFT AZURE *Jul. 2021 - Present*
- Developed a user-friendly frontend dashboard in **Nuxt.js** for students to apply to BOLT's events, and for organizers to manage BOLT events and applicants
- Implemented a **Node.js GraphQL** backend server with **PostgreSQL** which holds **100+** users and events
- Deployed frontend and backend with **Azure App Service** and **Azure DevOps** for CI/CD

Projects

InDaBin - Smart Disposal Tracker ⬈ *Ignition Hacks 2022*
GO, RUST, FLUTTER, RASPBERRY PI, POSTGRESQL, DOCKER, GOOGLE VISION *Aug. 2022*
- Engineered a hardware garbage sorter with image detection using **OpenCV** and **Bluetooth**, which won **First Place**
- Developed a **Go Rest API** that identifies disposables and sorts them using **Google Vision and Text to Speech**
- Made an authenticated **Flutter** app that displays statistics and day to day insights on trash and recycling habits

SubSpace - Cloud Collaboration ⬈ *Hack The North 2020 ++*
VUE.JS, NODE.JS *Jan. 2020*
- Developed a way to remotely deploy and share virtual machines with coworkers on the browser which won the **Finalist Award**, placing **top 24 out of 3000+ participants**
- Used **Node.js**, **NoVNC** for the registration, sharing, and live collaboration logic, displayed on **Vue.js** frontend

Awards

2020	**René Descartes National Math Scholarship**, **$25,000** awarded to **less than 10** students	*UWaterloo*