Kenny Zhao

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EXPERIENCE

Software Engineer 05/2025 – 08/2025
Canadian Space Agency, Government Institution Longueuil, Canada
- Designed and executed automated test procedures for **microbolometer** detectors in the TICFIRE project, leveraging **Python**-based test scripts and **data processing pipelines** to analyze over **150** hours of performance data in **IR** calibration environments
- Developed and maintained software for embedded system **validation**, integrating **C** and **Python** tools to streamline **data acquisition**, automate hardware-in-the-loop testing, and improve test execution efficiency by **20%**

Systems Engineer 01/2025 – 04/2025
Canadian Space Agency, Government Institution Longueuil, Canada
- Developed **technical documentation** for the **TICFIRE** project, ensuring compliance with **NASA**, **CSA**, and contractor standards to maintain **consistency** and **regulatory alignment** across stakeholders
- Designed and analyzed optical systems using **MATLAB**, enhancing test accuracy by **50%** and producing technical reports that **optimized** testing procedures and accelerated **R&D** efforts

Research Data Engineer 05/2024 – 08/2024
McMaster University, Public Research Institution Hamilton, Canada
- Led software development efforts as a research **Data Engineer** at the McMaster Interdisciplinary Satellite Team, overseeing the creation of Mission and Operations Control Software for the team's **CubeSat** project, PRESET
- Engineered a robust Dashboard for the team's HASP 2024 test integration and flight in Texas using **React**, **Python**, **InfluxDB** and **Grafana** to facilitating communication with the satellite for enhanced data visualization and transmission resulting in a **30%** increase in data accessibility and efficiency

EDUCATION

Honours Bachelor of Applied Science in Computer Science with Minor in Statistics 09/2022 – present
McMaster University, CGPA 3.8/4.0 Hamilton, Canada
Mission Operations and Control (MOC) Co-lead at the McMaster Interdisciplinary Satellite Team

PROJECTS

LavaLock - Security Powered by Real-World Chaos 01/2026 – 01/2026
Esp32, AWS, C++/C, Go, Swift, Postgresql, Gemini API
- Developed LavaLock, a password manager application in **Swift** that leverages the chaotic entropy of a lava lamp and **Gemini** to generate controlled visual variations to enable **secure password/code generation**, through **cryptographic algorithms;** winning the student swift challenge at **DeltaHacks XII.**
- Powered API calls and authentication through a **Go** and **C/C++ backend** while integrating **AWS** for secure and scalable image storage.

HealthChain - Revolutionizing the Future of Digital Healthcare with Blockchain 01/2023 – 01/2023
ReactJs, TypeScript, NodeJs, Git, Blockchain
- Built HealthChain, a secure **React** based web application leveraging **blockchain** for uploading and managing sensitive medical documents
- Engineered **blockchain** backed features to ensure data integrity, privacy, and accessibility; **winner at DeltaHacks IX** for its innovative use of Verbwire API to access Web3

heAR - Augmented Reality and NLP for Enhanced Communication 09/2022 – 09/2022
Python, Flask, Co:here, AR, Heroku, C#, Unity, Git, AI, NLP
- Developed, heAR, an augmented reality **Natural Language Processing (NLP)** application capable of real-time speech summarization
- Utilized **Python**, **PyTorch, Scikit-learn, Flask**, and **Heroku** to seamlessly integrate our Unity code in **C#** with **Co:here's API,** enabling the processing and summarization of speech

SKILLS

- Languages: R, C/C++, JavaScript, HTML, CSS, Python, Bash, Swift, Go
- Frameworks/Software: SQL, NumPy, ReactJs, Git, Unix, Slack, Github, Excel, Flask, Project, Confluence, PyTorch, MATLAB