detimzhao@gmail.com
480-207-9033

# Detim Zhao

linkedin.com/in/detimzhao
github.com/DetimZhao

*Software Engineer*

## Technical Skills

**Programming Languages**: Java, Python, C/C++, Go, C#, SQL (PostgreSQL/MySQL), Bash/Shell Scripting
**Libraries & Frameworks**: PyTorch, scikit-learn, pandas, NumPy, OpenCV, Flask, FastAPI, Protocol Buffers
**System & Infrastructure**: Apache Kafka, Telegraf, InfluxDB, Grafana, Redfish, systemd
**Cloud & DevOps**: Git, GitLab CI/CD, Docker/Podman, Ansible, AWS
**AI & Data**: ChromaDB, RAG, ETL pipelines
**Tools**: GitHub Copilot, ChatGPT, opencode, Pytest, JUnit, LaTeX, Agile, Jira

## Experience

**High Performance Computing (HPC) Engineering Intern** May 2026 – Present
*Los Alamos National Laboratory* *Los Alamos, NM*

- Designed and deployed a hardware telemetry pipeline using Redfish API, Kafka, InfluxDB, and Telegraf, collecting 830K+ data points daily with zero data loss through containerized microservices and systemd automation.
- Reverse-engineered Intel Redfish API, implementing telemetry polling and event subscriptions across 6 endpoint families with a Python Flask receiver using dual-write pattern (Kafka + file storage).
- Provisioned a multi-node Rocky Linux cluster using OpenCHAMI, automating OS deployment via Kickstart and cloud-init, and implementing a GitLab CI/CD pipeline to automatically build and test boot images on commit.

**Extended Reality (XR) Developer** July 2024 – May 2026
*Mesh Labs (formerly Meteor Studio)* *Mesa, AZ*

- Containerized a GPU-enabled multi-dependency environment using Docker Compose, reducing setup time from 60 to 16 minutes and eliminating Linux/WSL2 compatibility issues.
- Developed a Python 3D camera calibration pipeline using RANSAC-based feature matching and ICP point cloud registration for accurate multi-view scene reconstruction.

**Undergraduate Researcher** June 2023 – August 2023
*Texas A&M-Corpus Christi* *Corpus Christi, TX*

- Developed multi-drone control system for PX4 drones in Gazebo simulation, debugging timing and communication across hardware/software boundaries while coordinating up to 10 autonomous drones.
- Designed windowing-based preprocessing pipelines for time-series sensor data, trained and validated KNN, SVM, Random Forest, and Naive Bayes ensemble models, improving gesture recognition accuracy by 10%.

## Projects

**gRPC Microservices System**

- Architected a distributed system with 5 gRPC-based microservices, implementing both interactive CLI and automated client interfaces with robust error handling and modular service design.
- Implemented 5 gRPC services (Fitness, RecipeBook, Sort, Joke, Echo) with Protocol Buffers, file-based persistence, a service registry for discovery, and thread-safe concurrent request handling.
- Deployed system on AWS EC2 instance with public accessibility, enabling multi-client access and validating concurrent service requests.

**AI-Integrated Wireless Emergency Alerts**

- Engineered a FastAPI microservice integrating retrieval-augmented generation (RAG) with ChromaDB to enable semantic search and context-aware LLM responses.
- Designed a containerized automation system with custom scheduling and health endpoints to orchestrate data ingestion, scraping, and LLM pipelines.
- Developed a fault-tolerant Python scraper for the PBS WARN API, utilizing exponential backoff to reliably extract and normalize live emergency data.
- Built a ChromaDB cleanup service that parses expiration timestamps and batch-deletes stale alerts on a 2-hour schedule, with a health endpoint verifying cleanup status.

**Gym Calendar Application (Memoranda) Modernization**

- Integrated Google Calendar API with OAuth2 to synchronize cross-timezone class schedules, implementing push-based event creation and resolving datetime offset conflicts.
- Refactored legacy Java codebase (25,000+ LOC) to eliminate compiler warnings and improve maintainability while managing Git workflows and merge conflicts.

## Education

**Bachelor of Science, Software Engineering** May 2026
*Arizona State University, Polytechnic* *Mesa, AZ*