

Ethan Jiang

[linkedin.com/in/yitian-jiang-cs](https://www.linkedin.com/in/yitian-jiang-cs) | tian01489@gmail.com

405-714-4967

Mountain View, CA

EDUCATION

Carnegie Mellon University, Silicon Valley

Master of Science in Software Engineering

Expected December 2027

Mountain View, CA

Oklahoma State University

Bachelor of Science in Computer Science | GPA: 3.90/4.00, summa cum laude

May 2026

Stillwater, OK

SKILLS

Languages: Python, Java, JavaScript, TypeScript, C++, Swift

Frameworks & Libraries: Spring Boot, Spring Cloud, Spring Security, React, Vue.js, Node.js, Express.js, Socket.IO, CesiumJS, OpenCV, MediaPipe, NumPy, SwiftUI

Databases & Tools: PostgreSQL, Redis, Kafka, AWS S3, Docker, SQLite, REST APIs, JWT, Git, Linux, Xcode

Geospatial: GeoJSON, ESRI Shapefile (SHP)

EXPERIENCE

Shenzhen Etop Information Corp.

May 2024 - Aug 2024

Software Development Intern

- Extended a **TypeScript** SHP-to-GeoJSON conversion pipeline to support ESRI **PolygonZ**, resolving a production import failure by inspecting binary records and implementing an ArrayBuffer/DataView parser for polygon parts, XY/Z arrays, and 3D **GeoJSON** coordinates.
- Refactored shared Polygon/PolygonZ parsing logic to preserve multipart geometry and interior-ring topology; added buffer-boundary validation and optional measure-field handling, then verified XYZ propagation through the existing **Vue + CesiumJS** 3D GIS pipeline without regressing standard 2D Polygon imports.
- Executed **40+** manual end-to-end and regression workflows covering SHP/GeoJSON ingestion, 3D layers visualization, feature interaction, and geometry/property editing; documented **25+** reproducible defects with test data and diagnostic details, and regression-verified **15+** fixes across staging builds prior to release.

PROJECTS

Real-Time Messaging Platform

Jun 2026 - Aug 2026

Node.js, Socket.IO, Redis, PostgreSQL, WebSockets, Distributed Systems, Load Testing

- Built a horizontally scalable **Node.js/Socket.IO** messaging backend with the **Redis** adapter for cross-instance broadcasts and **PostgreSQL** for durable message storage.
- Implemented retry-safe, idempotent delivery with **UUID** message IDs, acknowledgments, bounded retries, and PostgreSQL uniqueness constraints, preventing duplicate writes during retransmission and reconnection.
- Benchmarked **1,000** concurrent **WebSocket** clients with a custom load-testing harness, achieving **100%** connection/ACK success and **1M** cumulative broadcast deliveries in local tests.

Concurrent Ticketing Platform

Aug 2025 - Dec 2025

Java, Spring Boot, Spring Cloud, Spring Security, Kafka, Redis, PostgreSQL, Docker, AWS S3

- Developed **Spring Boot** microservices for event discovery, seat reservations, and ticket orders, with API gateway routing, **JWT/RBAC** authorization, and **AWS S3**-backed asset storage.
- Engineered **Redis**-based seat locking and caching to coordinate concurrent reservations, with **Kafka**-driven asynchronous order workflows.
- Created a distributed ticket and order ID service sustaining **~26K** QPS per node in local load tests; containerized backend services with **Docker**.

Athletic Motion Capture System

Jan 2026 - May 2026

Python, OpenCV, MediaPipe, NumPy, AprilTag, Computer Vision, Pose Estimation, Camera Calibration, 3D Reconstruction

- Constructed a three-camera 75 Hz 2D-to-3D pose reconstruction pipeline using **MediaPipe/OpenCV**, converting synchronized 2D landmarks into calibrated 3D skeletal trajectories for biomechanical analysis.
- Calibrated camera extrinsics with **AprilTag/OpenCV** across **475/476** frames and implemented **SVD** triangulation, reconstructing **8,256** valid 3D positions at **5.85-pixel** mean reprojection error.
- Analyzed 87 stable squat frames to compute bilateral knee/hip angles, five bone-length measurements, pelvis/ankle trajectories, and three movement events for automated training analysis.

LEADERSHIP & AWARDS

OSU Chinese Students and Scholars Association | *President*

Aug 2025 - May 2026

- Led a **100+** attendee Chinese New Year Gala and raised **\$2,000+** in sponsorships through university and external-partner outreach.

Awards: Phi Kappa Phi; Outstanding Computer Science Scholar (2024, one of three undergraduate recipients); Clark & Dorothy King Endowed Scholarship (2024-2025)