

Shawn Zhao

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EDUCATION

University of Illinois Urbana-Champaign

Master of Computer Science

Expected Dec 2025

GPA: 3.8/4.0

Arizona State University

Bachelor of Science in Computer Science

Dec 2022

GPA: 3.9/4.0

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, Go, SQL, HTML/CSS

Frameworks: Spring Boot, Django, Flask, FastAPI, Node.js, Express.js, Next.js, React.js, Selenium, Jenkins

Tools: PostgreSQL, MySQL, MongoDB, SQLite, Redis, Docker, Kubernetes, AWS, GCP

EXPERIENCE

Graduate Researcher

University of Illinois Urbana-Champaign

Jan 2025 – Present

Champaign, IL

- Conducted research on energy-aware routing and power optimization for inter-satellite links (ISLs) with Prof. Indranil Gupta, in collaboration with PhD students Xiaojuan Ma and Shashwat Jaiswal
- Simulated dynamic LEO satellite constellations using StarryNet to evaluate latency, bandwidth, and routing performance under realistic orbital movement
- Developed routing modules in StarryNet using Python, Docker, and BIRD, and built a modular BandwidthManager for adaptive ISL configuration
- Implemented demand-aware bandwidth allocation with BandwidthManager, saving up to 25% energy while keeping latency within 10% of baseline

Software Engineer Intern

Civilience

Aug 2024 – Apr 2025

Omaha, NE

- Built serverless RESTful APIs with AWS Lambda, Python (Flask), and Node.js (Express), improving average response times by 22%
- Migrated legacy APIs to microservices architecture, decreasing request latency from 150ms to 105ms and saving \$1,200 annually in server costs
- Secured authentication with AWS Cognito and managed large-scale data using DynamoDB and RDS
- Automated 30+ IAM role assignments for AWS EC2 and Amplify, saving 30 hours of manual effort each month

Software Engineer

Rnd4impact

Feb 2023 – Jul 2024

San Jose, CA

- Developed scalable APIs with Django and PostgreSQL, boosting query time from 350ms to 200ms
- Built Spring Boot microservices with AWS RDS and S3, enabling scalable storage for 100 GB of structured and unstructured data
- Improved software reliability by automating regression tests with Selenium, resolving 20+ production bugs

PROJECTS

GEMstack 3D Log Viewer | *TypeScript, React.js, Three.js, Next.js, Zustand*

Jan 2025 – May 2025

- Contributed to the open-source GEMstack by building a React-Three-Fiber 3D viewer for autonomous vehicle logs
- Created a TypeScript log parser and timeline builder with Zustand for real-time multi-agent visualization
- Achieved 60 FPS playback with smooth interpolation, camera controls, and optimized client-side rendering

RainStorm | *Java, Distributed Systems, Multithreading, Socket Programming*

Aug 2024 – Dec 2024

- Built a membership-list protocol with gossip heartbeats, leader election, and node view for P2P coordination
- Developed a multithreaded P2P file system with chunk replication and dynamic discovery for reliable data transfer
- Implemented a real-time Java stream processing system with optimized pipelines (+15% throughput), 2s failure detection/recovery, and dynamic task rescheduling