Shawn Zhao

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EDUCATION

University of Illinois Urbana-Champaign · Expected Dec 2025
Master of Computer Science · *GPA: 3.8/4.0*

Arizona State University · Dec 2022
Bachelor of Science in Computer Science · *GPA: 3.9/4.0*

EXPERIENCE

Graduate Researcher · Jan 2025 – Present
University of Illinois Urbana-Champaign · *Champaign, IL*

- Conducted research on energy-efficient routing and power management for inter-satellite links (ISLs) in collaboration with PhD students Xiaojuan Ma and Shashwat Jaiswal, mentored by Prof. Indranil Gupta
- Explored energy-efficient strategies inspired by ad-hoc sensor networks, focusing on Transmission Power Control, Load Distribution, and Sleep Scheduling
- Investigated advanced routing strategies such as ECARS, ERU-DOD, and ERA-DOD to balance energy efficiency and network performance in ISLs
- Evaluated trade-offs between latency, power consumption, and network stability to enhance ISL longevity and reliability

Software Engineer Intern · Aug 2024 – Apr 2025
Civilience · *Omaha, NE*

- Built serverless RESTful APIs with AWS Lambda, Python (Flask), and Node.js (Express), handling 50,000+ daily requests and improving 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 100+ IAM role assignments for AWS EC2 and Amplify, saving 30 hours of manual effort each month

Software Engineer · Feb 2023 – Mar 2024
Rnd4impact · *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 500GB+ of data
- Created a responsive frontend with Next.js and TypeScript, reducing page load time by 1.5 seconds
- Enhanced software reliability with Selenium regression tests, resolving 70+ 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

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, C#, 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