

# Zheyuan (Stanley) Lin

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## EDUCATION

Emory University | Atlanta, GA

Bachelor of Science in Computer Science and Mathematics | August 2023 – Dec 2026 GPA: 3.93/4.00

Course: Distributed Systems, Cloud Architecture, Computer Networks, Database Systems, Algorithms & Data Structures, Software Engineering

## EXPERIENCE

Tencent | Shenzhen, China

Software Development Engineer Intern | May 2025 – August 2025

- Developed distributed **ID** service with dual-mode Segment/**Snowflake** architecture, achieving **5,000 QPS** with sub-2ms latency.
- Implemented **MySQL** batch allocation and double buffering, generating **5K IDs/second** while reducing database queries by **95%**.
- Built **Snowflake** mode with **ZooKeeper** worker coordination, producing time-sortable **64-bit IDs** with clock drift detection.
- Designed lock-free concurrency using **AtomicLong** and **ReadWriteLock**, enabling async loading to eliminate generation latency.
- Created adaptive step algorithm auto-scaling batch size **1K-100K** based on traffic patterns, reducing wasted **IDs** by **40%**.
- Established monitoring dashboard with real-time buffer metrics and **HTTP** endpoints, achieving **98%** uptime across all environments.
- Coordinated with 3 downstream service teams to validate ID generation requirements, migrating 5 legacy services to the ID system.

XiaoMi Technology | Beijing, China

Software Development Engineer Intern | May 2024 – September 2024

- Built Spring **Kafka** analytics pipeline processing **50K** events/second with **JDBC** bulk inserts, reducing 95% ClickHouse operations.
- Designed event transformation service mapping JSON to **ClickHouse schema** with data validation and comprehensive **error logging**.
- Integrated **Micrometer** + **Prometheus** to monitor consumer lag, throughput, and error rates, achieving 99% uptime with alerts.
- Configured **Spring profiles** (dev/staging/prod), implemented exponential backoff retry with **Resilience4j**, and added **CircuitBreaker**.
- Established **JUnit** testing with 85% coverage, validating stream pipelines with performance benchmarks simulating production load.

Ping An Technology | Nanjing, China

Software Development Engineer Intern | May 2023 – August 2023

- Extended **gRPC-based Kubernetes API** with **22** endpoints serving **1,900+** engineers, reducing incident resolution time by **75%**.
- Built **React** console plugin with **JWT/RBAC** authentication, visualizing pod health across **50+** namespaces, achieving low latency.
- Designed health analysis engine processing **1,000+** requests/s, improving the success rate by **35%** reducing debugging time by **60%**.
- Implemented monitor in **Chronosphere** with dashboards tracking **API** latency and **CPU/memory** utilization with automated alerting.
- Engineered automated **pod remediation** system with **PostgreSQL** audit trail, handling **500+** daily cleanup operations.
- Optimized performance with **Redis** caching, achieving **70%** hit rate and **goroutine** parallelization, reducing p95 latency to **450ms**.

## PROJECTS

Low-Income Housing Tax Credit Investment Platform | **Flask, PySpark, Redis, Docker, Google Maps API, AWS, GPT-4**

- Built **ML** pipeline for affordable housing investment analysis, processing **1,860+ applications**, supporting **\$2.5M+ investment decisions**.
- Developed **PySpark** ETL extracting **40+ features** from **PDFs, APIs, and databases** with **Google Maps** and **Census** integration.
- Engineered **Flask REST API** serving predictions and feature extraction with **≤200ms P95 latency**, implementing retry logic consistently.
- Resolved **Google Maps** rate limiting using **Redis** caching, achieving **92% hit rate** with **7-day TTL** and **OpenStreetMap** fallback.
- Built a geospatial scoring system using **Shapely** for school district boundary intersection and **PostGIS** spatial queries for analysis.
- Integrated **LLM-based** parser using **GPT-4 API** for structured **PDF** extraction, improving data quality and processing efficiency.
- Deployed production system on **AWS EC2** with **Docker** containerization and automated CI/CD pipeline using **GitHub Actions**

Lumos Visualization Interface | **Angular, TypeScript, Node.js, Express.js, Docker, PostgreSQL, WebSocket, D3.js**

- Built a research platform with **Angular** and **D3.js**, studying cognitive biases in data interpretation for **CHI 2026** submission.
- Implemented **WebSocket** telemetry capturing interaction patterns, including hover timing and clicks, supporting multi-observation sessions.
- Developed bias detection computing outlier focus ratio for points **≥2σ from the mean** and **chi-square test** on the distribution.
- Resolved real-time sync for observers via **WebSocket** broadcasting, ensuring **<100ms** latency for **10+ concurrent sessions**.
- Deployed containerized services using **Docker** with **PostgreSQL** database, achieving **99.5% uptime**, supporting research data collection.
- Implemented **Connection Pooling** and **Query Optimization**, handling **5K+ interaction events/session**, ensuring scalable data persistence.

## SKILL

- Languages & Frameworks:** Java, Python, C#, SQL, Go, Spring Cloud, Vue.js
- Backend & APIs:** RESTful API, GraphQL, gRPC, Microservices, API Gateway, Swagger, WebSockets, Service Mesh, Rate Limiting
- Distributed Systems & Messaging:** Kafka, RabbitMQ, Redis (Cluster/Sentinel), Zookeeper, Event-driven Architecture, Pub/Sub
- Databases & Storage:** MySQL, PostgreSQL, Redis, MongoDB, Connection Pooling, Query Optimization, Database Indexing
- Cloud & Infrastructure:** Docker, Kubernetes, AWS (EC2, S3, Lambda, RDS, DynamoDB, ECS)
- Observability & Testing:** Prometheus, Grafana, ELK Stack, JUnit, Unit/Integration/E2E Testing, Load Testing
- DevOps & CI/CD:** GitHub Actions, Jenkins, Docker Compose, Automated Testing
- Certifications:** AWS Certified Developer Associate (DVA-C02), Certified Kubernetes Application Developer (CKAD)