

Baowen Liu

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EDUCATION

The Ohio State University

Columbus, OH

B.S. in Computer Science and Engineering, Minor in Math — GPA: 3.965/4.0 (Top 1%)

Aug. 2024 – May 2028

EXPERIENCE

Undergraduate Research Assistant

May 2026 – Aug. 2026

The Ohio State University Department of Computer Science and Engineering

Columbus, OH

- Built an online research platform with dynamic stratified sampling and automated concurrent-user simulations
- Developed a full-stack platform using **Node.js**, **JavaScript/JQuery**, **MySQL**, **Bootstrap**, **Webpack**, building **RESTful APIs** with metadata workflows, leveraged **Python**, **Pandas** for experimental data processing

Undergraduate Teaching Assistant — Fundamentals of Engineering

Jan. 2026 – Sep. 2026

The Ohio State University College of Engineering

Columbus, OH

- Taught **MATLAB/CAD/Excel** and programming concepts, and performing training sessions to 70 students.

Software Development Engineer Intern

May 2025 – Jul. 2025

SPIC Integrated Smart Energy Co., Ltd.

Beijing, China

- Built a production-oriented **RAG-based** knowledge retrieval platform supporting technical manuals, operational procedures, and internal documents and 100+ concurrent queries
- Developed document ingestion, retrieval, and LLM orchestration pipelines for enterprise power-utility knowledge using **LangChain**, **FastAPI**, **FAISS**, **Cohere embeddings**, enabling semantic search with **pgvector** storage.
- Implemented hybrid search combining vector **similarity search** with **BM25** keyword retrieval, improving retrieval accuracy for domain-specific terminology across enterprise knowledge.

Software Development Engineer Intern

Aug. 2025 – Dec. 2025

Beijing Hanwei Jialian Technology Co., Ltd.

Beijing, China

- Built a distributed **CRM** platform using **Spring Boot**, **Redis**, and **Elasticsearch**, supporting customer and contact management through scalable **RESTful APIs** with filtering, sorting, and pagination.
- Implemented an **Event-driven** architecture using **RocketMQ** for decoupled and **asynchronous** transaction
- Improved customer and lead search by implementing **Elasticsearch inverted-index** search, reducing search **latency** by 40% compared with MySQL fuzzy queries.
- Improved frequent queries via **Redis** with **cache aside**, achieving a hit rate of 80%, reduced repeated queries.
- Built an automated **CI/CD pipeline** using **Jenkins**, **GitHub Actions**, and **Docker** to automate application builds, testing, reducing deployment time by 30%.

PROJECTS

Online Shopping Platform | *Spring Cloud, AWS ECS, ECR, Docker, DynamoDb*

Aug. 2026 – Present

- Built online shopping **distribute** system, handle Prime Day Sale event up to 10K QPS traffic
- Utilized **Distributed Lock** with **Redis** and Lua script, implement the caching inventory Lock and Revert of **Try-Confirm-Cancel** pattern, completely prevented overselling happens for sale events
- Achieved peak load shifting with **AWS SQS**, handle **burst traffic** requests as **async** jobs to protect service
- Containerized microservices with **Docker** and Amazon **ECR**, deployed services to AWS **ECS**, and provisioned infrastructure with AWS **CDK** (TypeScript)/**CloudFormation**, integrating **CodeBuild** and **CodePipeline** to automate multi-environment deployments and reduce release time by 60%.

User Center System | *React, AntD Pro, Spring Boot, MyBatis-Plus, MySQL, Docker*

May 2025 – Dec. 2025

- Developed a production-ready full-stack user system (login, registration, user mgmt)
- Implemented backend APIs and database models with Spring Boot, MyBatis-Plus, MySQL
- Built frontend pages with **React** + AntD Pro, including validation and API integration

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, SQL (MySQL/PostgreSQL), HTML/CSS

Frameworks: Spring Boot, Spring Cloud, Spring AI, LangChain4j, MyBatis-Plus, React, Kubernetes, CI/CD

Developer Tools: Docker, Nginx, Git/GitHub, IntelliJ IDEA, VS Code, AWS ECS/SQS/DynamoDB/Lambda/IAM

Libraries: PgVector, RAG Components, Umi Request, PyTorch, pandas, NumPy