

# 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 Teaching Assistant — ENGR 1181 & Open Lab

Jan. 2026 – Present

*The Ohio State University College of Engineering*

*Columbus, OH*

- Work in teaching team to help about 70 students in both class and lab settings
- Support students in mastering 3D visualization, CAD software
- Assist students and professors during lectures, teaching MATLAB and programming concepts, grading assignments, and performing training sessions.

### Technical Intern

Oct. 2025 – Jan. 2026

*Nanoshape, Inc.*

*Columbus, OH*

- Built Python/PyTorch tools supporting Nanoshape's AI simulation framework
- Improved multi-agent coordination stability by 10–15% through algorithm refinement
- Implemented simulation modules and validated performance over 100+ automated runs

### Software Engineer

May 2025 – July 2025

*SPIC Integrated Smart Energy Co., Ltd.*

*Beijing, China*

- Compiled a 40-page system architecture document standardizing module logic and data flows across 6 subsystems in the virtual power plant (VPP) platform.
- Operated SQL databases by creating tables, managing telemetry/status data, and handling dispatch records
- Built Java components to read/write/validate database records for core system modules

## PROJECTS

### 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
- Supported deployment using Linux + Docker + Nginx (reverse proxy, CORS, multi-env)

### AI Relationship Agent System | *Spring AI, LangChain4j, PgVector, MCP, ReAct Agent*

Dec. 2025 – Present

- Developed an AI-powered relationship assistant supporting multi-turn conversations, memory retention, RAG-based knowledge retrieval, and tool calling for tasks such as location search and date-plan generation.
- Implemented a ReAct-style autonomous planning agent, capable of web searching, content extraction, file generation, and executing multi-step workflows.
- Built vector-based semantic search using PgVector and optimized document chunking, retrieval, and reranking to improve answer relevance
- Integrated Spring AI features—including ChatClient, Advisors, structured outputs, and persistent memory—to enhance reasoning quality and system reliability
- Deployed backend services using Docker + Serverless platforms, enabling scalable API access for AI chat, agent execution, and knowledge retrieval

## TECHNICAL SKILLS

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

**Frameworks:** Spring Boot, Spring AI, LangChain4j, MyBatis-Plus, React, Ant Design Pro

**Developer Tools:** Docker, Nginx, Git/GitHub, IntelliJ IDEA, VS Code, Serverless Platforms

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