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 — Feb. 2026 – Present
The Ohio State University Department of Computer Science and Engineering — *Columbus, OH*
- Developed a Unity (C#) educational game modeling fractions as numerical values, implementing fraction logic with instant feedback
- Built responsive gameplay mechanics (collision & events) and collaborated via GitHub for version control and parallel development

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