

Yaoyu Chen

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EDUCATION

University of Michigan Ann-Arbor– Ann Arbor, Michigan

Graduation May 2026

Bachelor of Science in Data Science , GPA: 4.0

Relevant coursework: Data Structure and Algorithms, Web Development, Object-Oriented Programming, Databases, Software Engineering, Mobile App Development, Machine Learning

SKILLS & CERTIFICATIONS

- **Programming Languages:** C++, Python, HTML, Javascript, SQL, Neo4j, MySQL, C
- **Libraries/Technologies:** Redux, Express, MongoDB, Azure
- **Frameworks:** Spring, React, Node.js

EXPERIENCE

Demystifying LLM-based Software Engineering Agents - Researcher | Champaign, IL Feb 2024 - Current

- Contributed to reproducing the AGENTLESS approach, automating software problem-solving through localization and repair, achieving a 27.33% resolution rate on the SWE-bench Lite benchmark.
- Transformed the project's codebase into a tree structure, leveraging GPT-4o to rank suspicious files and generate class/function skeletons, effectively pinpointing potential modification locations.
- Generated, tested, and validated multiple patches through regression testing, ultimately selecting the most effective patch for submission.
- Conducted an in-depth analysis of 300 issues, identifying misleading patches and insufficient problem descriptions, leading to improvements in the SWE-bench Lite-S benchmark.

University of Illinois Department of Computer Science - Course Associate | Champaign, IL Feb 2023 – Jan 2024

- Tutored students in Java and Python, improving their grades significantly
- Developed and taught coding bootcamps, helping 50+ students start their programming career

PROJECTS

E-Learning System (Udemy Clone) - Full-Stack Developer | Team of 1

- Developed a full-stack e-learning platform using Next.js, React, and Node.js, enabling course creation and user management.
 - Integrated secure payment processing using Stripe API, resulting in successful payment transactions.
 - Deployed the application using AWS services (S3, Lambda), improving scalability and performance.
- Utilized: Next.js, React, Node.js, Express, MongoDB, AWS (S3, Lambda), Stripe API

Result-Oriented Web Developer Course - Web Developer | Team of 1

- Developed responsive and interactive web pages using HTML, CSS, and JavaScript, improving user engagement by 30%.
 - Implemented front-end and back-end integration using RESTful APIs, reducing data retrieval time by 25%.
 - Optimized website performance by using best practices in web development, resulting in a 40% increase in page load speed and improved SEO ranking.
- Utilized: HTML, CSS, JavaScript, RESTful APIs, Bootstrap, Git

Complete MongoDB Developer Guide - Database Developer | Team of 1

- Designed and implemented a database system using MongoDB, creating a scalable architecture for managing large datasets and improving query performance by 30%.
- Developed aggregation pipelines to process complex queries, optimizing data retrieval for analytics and reporting.
- Implemented indexing and sharding strategies, reducing database latency by 25% and ensuring efficient data distribution across multiple servers.
- Integrated MongoDB with a Node.js back-end, enabling seamless data operations in a full-stack web application.

