

# Zayd Abualfellat

Grand Blanc, MI | (248) 216-2728 | [zabualfe@gmail.com](mailto:zabualfe@gmail.com) | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

## EDUCATION

### Michigan State University

*Bachelor of Science, Computer Science*

**Sep 2022 - May 2025**

*E. Lansing, MI*

- **GPA:** 3.7/4.0
- **Coursework:** Data Structures & Algorithms, Full-Stack Web Development, Machine Learning, Database Systems, Operating Systems, Object-Oriented Design, Calculus (I, II, and III), Statistics

## TECHNICAL SKILLS

- **Languages:** Python, C/C++, Lua, HTML/CSS, JavaScript, Typescript, SQL, XML
- **Frameworks/Operating Systems:** Flask, Django, LangChain, React.js, Linux/Unix
- **DevOps/Tools:** Git, GitHub, Jira, Docker, Postman, AWS, Microsoft Azure, Google Cloud Platform, MongoDB
- **Certifications/Concepts:** AWS Cloud Solutions Architect, RESTful APIs, OAuth 2.0, LLMs, Vector Embeddings, NLP

## EXPERIENCE

### Michigan State University

*Capstone Backend Engineer (in collaboration with Amazon)*

**Jan 2025 - May 2025**

*E. Lansing, MI*

- Designed a pipeline using AWS S3 and Amazon Bedrock to parse and extract metadata from 1,500+ Python, JavaScript, and C++ assets in under 5 minutes, enabling scalable semantic indexing
- Constructed vector embedding workflows via Amazon Bedrock, including a custom chunking system that improved semantic search relevancy from 55% to 85% by intelligently segmenting technical content into meaningful units for embedding
- Drove engineering quality for a 5-person agile team by managing GitHub codebase, leading sprints, enforcing pull request reviews, adopting best practices, and setting up CI/CD pipelines

### Michigan State University

*Undergraduate Learner's Assistant*

**Jan 2023 - May 2024**

*E. Lansing, MI*

- Mentored over 500 undergraduate students by delivering hands-on code reviews, debugging support, and conceptual guidance on object-oriented programming principles
- Led structured lab sessions and individualized assistance to reinforce core topics such as memory management, inheritance hierarchies, and modular function design
- Elevated student comprehension and code quality by clarifying complex language features and guiding effective software design practices

### Roblox

*Community Manager Intern*

**May 2023 - Aug 2023**

*San Mateo, CA*

- Directed the creation of the Connect Hub to facilitate networking among 100,000+ creators for the Connect 2023 event, executing weekly sprints and QA testing, resulting in a 20% increase in event participation
- Identified gaps in creator education across regions and launched a multilingual training program focused on game development fundamentals, piloting the initiative in the Portuguese developer community and generating 20+ valid submissions in the first week, which broadened creator engagement globally

### Roblox

*Summer Accelerator Intern*

**May 2022 - Jul 2022**

*Remote*

- Engineered both frontend and backend systems in Lua to support a multiplayer gameplay prototype, improving real-time responsiveness and overall server performance
- Partnered with a 5-person team to architect, implement, and debug modular systems, ensuring scalable client-server communication and feature extensibility
- Delivered a fully functional multiplayer prototype within aggressive deadlines, establishing a foundation for future iteration and external community testing

## PROJECTS

### AI-Powered Recipe Sourcing Tool

**May 2025 - Jun 2025**

- Developed an end-to-end semantic search platform using Ollama (Llama3) and ChromaDB to process and index 100+ recipes, enabling natural-language query understanding for precise recipe retrieval
- Designed and implemented a robust Kroger API integration using Python, handling OAuth 2.0 authentication, request batching, and error recovery to reliably fetch real-time ingredient pricing, availability, and product links for recipe results
- Iterated from concept to MVP in 3 agile sprints, leveraging modular design (Flask backend, LLM parsing, batch pipelines) and user feedback to prioritize features like real-time data and error handling

## **Semantic Search for Code Assets**

**Jan 2025 - May 2025**

- Constructed a pipeline to parse and extract metadata from 1,000+ code assets (Python, JavaScript, C++), enabling semantic indexing for large-scale technical documentation
- Engineered vector embedding workflows using Amazon Bedrock and custom models, optimizing searchable representations of code and architecture
- Deployed a cloud-native search platform (OpenSearch, Lambda, S3) with LLM-backed retrieval, improving code discovery accuracy by 90% and reducing latency