Michael Vertin

Software Engineer | Computer Science Graduate
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Education

Northern Arizona University – Flagstaff, AZ August 2020 – May 2025
Bachelor of Science, Computer Science
Minor in Mathematics and Electrical Engineering
GPA: 3.73, Dean's List

Skills

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, HTML/CSS
Frameworks/Libraries: Angular, React, Node.js, Spring Boot, JUnit, Flask, Socket.IO
Databases/APIs: SQL, REST APIs, HTTP APIs, JDBC
Tools/Platforms: Linux, Git/GitHub, Docker, AWS EC2
Other Skills: Object Oriented Programming (OOP), Debugging, Optimization, DevOps, Agile, Version Control

Experience

Quality Assurance, DataAnnotation.tech June 2025 – Present
- Design prompts and tests to evaluate LLM code generation across a variety of languages and frameworks.
- Conduct code reviews to identify defects, logical errors, and inefficiencies, often involving edge cases.
- Validate OOP, data structure, and algorithm best practices, improving correctness and maintainability.
- Analyze debugging and optimization techniques to raise code quality.

Full Stack Training, Revature August 2025 – Present
- Completed 150+ labs, projects, and assessments on Java, SQL, APIs, Spring Boot, Angular, React, and Node.js.
- Built two test-driven projects featuring Java, SQL, and Spring Boot, each passing 20+ automated tests.
- Developed front-end components in JavaScript, HTML/CSS integrated with REST APIs.

Teacher's Assistant, Northern Arizona University Jan 2023 – May 2024
- Reviewed 3-5 programming projects each week for correctness, readability, and coding standards.
- Produced detailed written feedback explaining issues, their impact, and recommended fixes, often clarifying theoretical CS concepts in context, similar to peer review.
- Assessed 100+ projects, building skill in spotting effective coding patterns and common pitfalls.

Projects

SCA Image Search insight.library.nau.edu
- Delivered a production-ready image retrieval system in an agile client-facing environment.
- Integrated a Hugging Face AI model for feature extraction, enabling similarity-based searches on 100k+ images.
- Improved search performance by over 300% by parallelizing HTTP requests to the client's database.
- Built a microservice that automated vector database insertion, preventing crashes from resource contention.

Word Search Optimization github.com/MichaelVertin
- Won 1st place by improving search performance 550%-1300% by locating and restructuring inefficient algorithms.
- Applied probabilistic analysis to skip complex insertions with high resource costs.

Halma Game Tournament github.com/MichaelVertin
- Placed 1st in a Halma bracket tournament using a self-adjusting depth algorithm that adapted in real time.
- Optimized alpha-beta pruning by shallow-sorting recursion order, reducing non-optimal evaluations.

Robot Invasion github.com/MichaelVertin
- Built a real-time Unity tower defense game using design patterns, object oriented principles, and event-driven logic.
- Implemented dynamic difficulty scaling and state-based tower controls for balanced gameplay.