



Michael Nugent

Software Engineer

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Summary

Bachelor of Science in Computer Science with academic projects [portfolio](#). Technical skills in software engineering, web development, and AI. Strong analytical abilities.

Education

Bachelor of Computer Science, California State University, Fresno. *magna cum laude* (3.7 GPA)

Academic Projects

Web Development – “Gomoku”

- Used LAMP stack, HTML, CSS, JavaScript, PHP, and MySQL to implement a local front-end client and back-end server to achieve database CRUD operations: user registration and login, game victory record updates, and fetches.
- Used object-oriented programming logic to enable complex game play.
- Refactored project to be a single-page application with a Model-View-Controller architecture that uses the React framework, and Google Firebase's NoSQL Firestore database.

Software Engineering – “RoadMap”

- As part of an Agile team, designed and built an academic guidance web application for students through the MERN (MongoDB, Express, React, and Node) stack.
- Established system requirements and implemented unit and integration tests through the Jest framework.
- Created UML class, sequence, and use-case diagrams.
- Practiced SOLID principles to achieve code readability and maintainability.

Artificial Intelligence – “Puzzle Slider”

- Implemented a state space search algorithm to efficiently identify the shortest path to a puzzle's solution.
- Optimized code to reduce domain's search time complexity from exponential to linear.
- Used heuristics to discount path costs and prioritize higher probability branches.

Artificial Intelligence – “Evolutionary Algorithm”

- Implemented biology inspired algorithm to solve N Queens problem.
- Explored and documented inferiority of brute force machine power against problem specific method (insight).

Networking – “Auctioneer”

- Wrote server and client Python programs to mimic an auctioneer service through sockets and ports.
- Employed threads – “concurrency” – to handle multiple connections.

Skills

- Web Development: LAMP, (Linux, Apache, PHP, MySQL), MERN, (MongoDB, Express, React, Node), Full Stack, JavaScript, HTML, CSS, NoSQL, REST, CRUD.
- Software Engineering: C, C++, Java, Cohesion/Coupling, SOLID Principles, Testing, UML Diagrams, and Architectures (MVC).
- AI: State Space Search, Heuristics, Evolutionary Algorithms, Adversarial Search
- Soft: Strong Work Ethic, Teamwork, Communication, Analysis/Problem-Solving, Critical/Creative Thinking, Dependability, and Quick Learning.