

Zachary West

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EDUCATION

University of Alabama

Tuscaloosa, AL

Bachelor of Science in Computer Engineering – GPA: 3.91/4.00

Aug. 2023 – May 2027

- Minor in Computer Science and Mathematics
- Relevant Coursework: Data Structures and Algorithms, Microcomputers, Signals and Systems, Electronics

EXPERIENCE

HealthTrust, HCA

Jun 2024 – Aug 2024

Executive Intern

Nashville, TN

- Reported to President/CEO, shadowed in executive meetings including MORs, AI workshop, dashboard meetings.
- Shadowed Executive Leadership including CPO, GPO CFO, Director of Information Security as well as the Supply Chain Financial Ops VP in various meetings, projects, and 1:1 mentor meetings.
- Utilized Excel and Microsoft Forms to standardize on-boarding process for a roster of over 600 members
- Automated monthly email report detailing PTO for a team utilizing Power Automate, Excel, and Outlook

Gasoline Inc.

Jan 2019 – Current

Apprentice, Event Technician, A1 Grip

Nashville, TN

- Collaborated in professional studio sessions as both a performer and assistant on a Grammy Award-winning album
- Filled various technical assistant roles in projects such as a documentary, TV Pilot, and video podcast
- Installed equipment on property including a Sauna, Cold Plunge, 25ft flagpole, and an electrical panel
- Designed and built a company computer

PROJECTS

Money Trees | *Python, Flask, OpenAI API, SQLite, React, Next.js, Chart.js,*

- 1st Place Fintech Winner – UAIInnovate Hackathon: Developed an AI-powered personal finance dashboard.
- Developed a prompt system (OpenAI API) for personalized financial advice and simplified complex terms.
- Designed and built an intuitive React/Next.js frontend featuring dynamic Chart.js visualizations.
- Built budget optimization microservices with Node.js and designed banker-friendly UI praised by judges.

Byte History | *Python, OpenAI API, Matplotlib, NumPy, Hashlib, Pnoise2, Voronoi, NLTK*

- Designed and implemented a Python-based procedural world generation engine, producing unique 2D maps using string-based random seeds, Perlin noise, Voronoi seeding, and tectonic plate simulation.
- Generated altitude determined by Perlin Noise with influences from tectonic plate fault lines
- Visualized worlds with Matplotlib, featuring interactive zoom/pan and dynamic coloring
- Enabled deterministic random seeding via string hashing, ensuring reproducible world generation.

Chess Game | *C++ , bitset*

- Engineered a playable chess game in C++ with an emphasis on object-oriented programming and bit manipulation, using bitboards for move generation, board representation, and rule enforcement.
- Implemented a move parser to handle algebraic notation input and generate move objects with correct metadata.

Odin Project Foundations Course | *JavaScript, HTML5, CSS, git*

- Gained solid foundation in HTML5, CSS3, Git/GitHub, and JavaScript fundamentals through projects.
- Gained experience with responsive design, developer tools, version control, and modular JavaScript
- Practiced problem-solving via coding challenges and built habits of test-driven, maintainable code.

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript, HTML5/CSS, PIC24 Assembly (16-bit Microchip MCU)

Frameworks: STM32 HAL

Developer Tools: Git, Visual Studio Code, MPLAB, STM32CubeIDE

Libraries: NumPy, Pnoise2, Matplotlib, Hashlib