Daniel Aoulou

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EDUCATION

Western Carolina University   Cullowhee, NC
Bachelor of Arts in Computer Science, Minor in Mathematics   *Aug. 2022 – May 2025*

EXPERIENCE

Web Developer   May 2021 – Present
Freelance   *Atlanta, GA*

- Provide web design and development services for businesses in Metro Atlanta, GA.
- Built and managed several Wix, Weebly, and Square sites for small businesses in Metro Atlanta, including hair salons, retailers, and tutors.
- Guided business owners in taking advantage of online business tools such as Google Business to reach more clients.
- Built landing pages, e-commerce applications, and organizational sites.

PROJECTS

Progranimate | *TypeScript, Python, React, TailwindCSS, Node.js, Express, MongoDB*   August 2024 – May 2025

- Developed a web-based application that visualizes program logic via a drag-and-drop flowchart, enabling bidirectional syncing between code and flowchart using UUID tracking and a custom CodeMirror extension.
- Designed and implemented a Node.js backend, introducing secure user authentication, role-based access control, and a persistent data model that enabled core features like user accounts, group management, and the modular Exercises system.
- Built a modular Abstract Syntax Tree code validation pipeline, allowing instructors to define structural rules (e.g., required loops, nesting depth) and deliver detailed, server-side validation feedback.
- Designed full CRUD tooling and dashboards for instructors to manage assignments, student groups, and custom exercises, including rule-based configuration and dynamic form generation.

Chess Meister | *Java, JavaFX*   January 2023 – May 2023

- Collaborated in a team setting to develop a modular, object-oriented chess engine in Java, designing interfaces and abstract models for board components, players, and piece movement logic.
- Implemented advanced chess rules such as castling using polymorphic move strategies and interface-driven design, improving code extensibility and readability.
- Built a full-featured JavaFX GUI with interactive board rendering, drag-and-drop movement, player preference settings and event-driven behavior to enhance user experience.

Battleship | *Java*   November 2024 – December 2024

- Engineered a full-stack multiplayer Battleship game using Java sockets and a custom message-passing protocol, enabling two-way real-time communication between clients and server.
- Implemented multithreaded connection handling to support concurrent players, ensuring thread-safe message transmission and event dispatching.
- Structured the Game controller to manage core logic, including player lifecycle, state transitions, and turn-based mechanics, following principles of encapsulation and modular design.
- Built a scalable messaging architecture using MessageListener and MessageSource interfaces, promoting loose coupling and extensibility in the networking layer.

CatGPT | *Google Cloud Platform, DialogFlow, Gemini API, Cloud SQL*   November 2024 – December 2024

- Built a chatbot to aid new computer science students with gathering information about classes and gauging class difficulties.
- Used Google Cloud Platform Cloud SQL for data storage, DialogFlow for identifying user intents, and Gemini API for natural language responses.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, HTML/CSS, Java, Python, SQL (Postgres, MySQL), MongoDB, Rust, C, R
Frameworks / Libraries: React, Node.js, Express, TailwindCSS, daisyUI
Developer Tools: Git, Google Cloud Platform, VS Code, PyCharm, IntelliJ, Eclipse