John Shockley

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Education

NC State University, Raleigh, NC — Dec 2024
Bachelor of Computer Science (*summa cum laude*) — GPA: 4.0/4.0
Coursework: Databases, Web Computing, Software Engineering, Networks, Data Structures & Algorithms, Operating Systems

Skills

Languages:	C, C#, C++, Java, JavaScript, TypeScript, SQL
Web Technologies:	React.js, HTML, CSS, Node.js, Bootstrap, Angular.js, Express
Tools:	Docker, Github/Git, Visual Studio, Unity, MySQL
Operating Systems:	Microsoft Windows, Linux (Ubuntu, CentOS, RHEL)

Projects

Game Engine (Team Size: 3) — Fall 2024

- Built C++ game engine with a component-based architecture and client-server networking, supporting real-time multiplayer gameplay on Windows/Ubuntu.
- Engineered a multithreaded physics simulation system, optimizing performance and ensuring real-time interaction.
- Implemented event-driven game object models for scalability and extensibility.

Progressive Web Application (Team Size: 3) — Fall 2024

- Developed a Progressive Web Application using JavaScript, HTML/CSS, Bootstrap, and Node.js for managing tasks, reminders, and categorized notes.
- Integrated offline functionality with service workers, enabling seamless user experience without an internet connection.
- Implemented secure user authentication with JWT and enabled push notifications for task reminders. Containerized in Docker on Linux.

Educational Analytics Tools for SnapClass (Team Size: 3) — Fall 2024

- Enhanced existing SnapClass platform with a TypeScript-based dashboard to provide real-time analytics for teachers monitoring struggling students.
- Integrated student activity tracking tools to identify inactivity and failed code runs.
- Developed and deployed RESTful APIs to synchronize real-time analytics between a TypeScript-based dashboard and backend services.

Open Source Experience

Voronator-sharp

- Implemented procedural terrain generation using Voronator-Sharp, converting Voronoi-based heightmaps into a mesh system for rendering in Unity.

Work Experience

Mathematics Tutor, Mathnasium, Raleigh, NC — August 2022 – Present

- Data-driven techniques to improve 20+ students' math scores. Design individualized lesson plans, using mental, verbal, visual, tactile, and written techniques.