Sage DuRivage

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WORK EXPERIENCE

Paper Education Co.   Remote
Computer Science Tutor   *January 2022 - Present*

- Supported more than 120 students in understanding programming concepts by hosting code reviews and providing technical feedback.
- Enhanced code reliability in **C++**, **Python**, and **Javascript**, resolving an average of 10 programming errors per KLOC by coaching trainee developers on SOP's for maintainable and scalable code.
- Optimized org.-standard troubleshooting practices, reducing time spent debugging by 15+ minutes per session by teaching students how to use **GNU Debugger** and **Valgrind** to analyze program execution.

University of California at Davis   Davis, CA
3D Software Instructor   *September 2022 - June 2023*

- Introduced 3D modeling and prototyping techniques using **Blender**, by delivering step-by-step tutorials and providing hands-on guidance to students.
- Enhanced students' rendering proficiency, reducing modeling errors by 15% through best practices in mesh faceting resolution, retopology, and graphical debugging.

PROJECTS

Ray Tracer • Personal Project   *February 2025*

- Implemented rendering techniques, including Lambertian shading, specular highlights, anti-aliasing, and ray-object intersection for spheres and planes.
- Tested and deployed the project in a Linux-based environment with **g++ 11.4.0**, ensuring compatibility with essential libraries; **libpng**, **libstdc++**, **libm**, and **libz**.

Eight Puzzle Solver • Personal Project   *November 2024*

- Implemented an **A* search** algorithm* in **C++** with Misplaced Tile and Euclidean Distance heuristics to efficiently solve the Eight Puzzle.

Galactic Odyssey Game • Team Project   *June 2024*

- Designed a text-based RPG in **C++** with an interactive story and procedural event generation.
- Engineered a modular codebase with optimized memory usage and scalable game mechanics.

Itinero Travel App • Team Project   *February 2024*

- Built a trip scheduling web app using **React.js** and **Cohere**'s natural language processing to interpret user queries, with a reusable **JSX component** to filter, sort, and display geographically-relevant information from Booking.com, Airbnb, and Google Maps API's.

EDUCATION

University of California   Riverside, CA
Bachelor of Science in Mathematics, Concentration in Computational Mathematics

*Technical Skills: **C++** (6 years), **GIT** (2 years).*

Relevant Coursework: Artificial Intelligence, Data Structures & Algorithms, Software Construction, Automata & Formal Languages, Computer Graphics, Game Theory, Numerical Analysis, Ordinary & Partial Differential Equations, Multivariable Calculus, Linear Algebra, Discrete Structures, Optimization.

ADDITIONAL

Citrus Hack UCR • Operations Lead   *June 2019 - July 2020*

- Oversaw the planning and execution of two hackathons by managing logistics, coordinating volunteers, allocating budget resources, organizing catering, and fostering a collaborative environment.