

Sage DuRivage

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SUMMARY

Creative Technologist with strong foundations in C++ and Python, experienced in model validation, academic tutoring, and data-driven development. Skilled at building and optimizing pipelines, debugging complex systems, and applying mathematical expertise to computational challenges. Focused on developing scalable, high-quality solutions.

SKILLS

- **Programming:** C++ (performance optimization, low-latency systems), Python (data processing, automation, scripting)
- **Systems & Tools:** Linux (system administration, shell scripting), Git, CI/CD pipelines
- **Computer Science & Engineering:** Computer architecture, real-time systems, distributed computing, databases
- **Domain Knowledge:** High-performance computing, quantitative analysis, algorithm optimization
- **Professional:** Detail-oriented, strong written and verbal communication, collaborative team player, ethical and ownership-driven

WORK EXPERIENCE

Confidential AI Lab (NDA)

Jul 2025 - Present

Model Validation Expert – Math Fellow (Contract)

Remote

- Executed data labeling and curation to support the development and validation of advanced AI/ML models, ensuring high-quality inputs for research.
- Applied mathematical expertise to guarantee accuracy, consistency, and quality in model training datasets.
- Conducted rigorous validation checks using domain-specific criteria to enhance overall model reliability.
- Collaborated with research and engineering teams under strict NDA compliance to refine labeling guidelines.
- Contributed insights during iterative testing cycles, providing feedback that helped optimize data pipelines.

Paper Education Co.

Jan 2022 - Present

Computer Science Tutor

Remote

- Guided over 120 students in mastering programming concepts through comprehensive code reviews and technical feedback.
- Enhanced code reliability in C++, Python, and Javascript by coaching on best practices and standard operating procedures, reducing an average of 10 programming errors per KLOC.
- Streamlined troubleshooting practices by instructing students in the use of GNU Debugger and Valgrind, reducing debugging time by more than 15 minutes per session.

University of California, Davis

Sep 2022 - Jun 2023

3D Software Instructor

Davis, CA

- 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.

EDUCATION

University of California, Riverside

Riverside, CA

Bachelor of Science, Mathematics, Concentration in Computational Mathematics

- **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

PROJECTS

Ray Tracer | <https://github.com/sagedurivage/ray-tracer>

Feb 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 | <https://github.com/sagedurivage/eight-puzzle-solver>

Nov 2024

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

Itinero Travel App | <http://devpost.com/software/itinero-travel-app>

Feb 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 APIs.