Joshua Daugherty

JoshMD00@gmail.com | github.com/JMD18 | linkedin.com/in/josh-daugherty/ | joshmd.dev

Experience

Lead Python Developer, *Celestia Diagnostics | Birmingham, AL* *Mar 2024 - Present*

- Sole developer responsible for designing, building, and maintaining a full-scale acquisition and analysis pipeline (production).
- Architect and deploy cloud infrastructure using AWS Lambda, S3, IAM, and Snowflake for efficient data warehousing and analytics.
- Develop internal GUI applications using a proprietary toolkit to streamline lab workflows and data interaction.
- Build secure, encrypted systems for HIPAA-compliant data storage and transmission across clinical, research, and analytics teams.
- Build, train, and deploy machine learning pipelines optimized for internal diagnostic and research applications.
- Maintain and evolve multiple Python repositories supporting analytics, backend services, and cross-functional data workflows, emphasizing modular and testable design.
- ***Note:*** *Specific details are confidential under NDA; available to discuss privately.*

Graduate Teaching Assistant - Probability & Statistics, *University of Alabama at Birmingham* *Aug 2023 - May 2024*

- Teach probability theory and Python programming (Numpy, Matplotlib, and other libraries)
- Assist 200+ graduate and undergraduate students by hosting lectures, office hours, and study sessions
- Proctor exams, prepare lecture materials, grade assignments, and mentor students through collaborative instruction and feedback.

Catalog Specialist, *Saucey Inc.* | Remote *Aug 2021 - Nov 2022*

- Evaluate 100's of stores' onboarding inventory and provide insightful feedback
- Modify SQL and Bash scripts according to parameters on a store-to-store basis
- Quality control of 100's of store menus and website products

Education

3.83/4.0 **Masters in Computer Science**, *University of Alabama at Birmingham* | Birmingham, AL

3.79/4.0 **Bachelors in Computer Science**, *University of Alabama at Birmingham* | Birmingham, AL

Relevant Courses: Computer Vision & CNNs, Deep Learning, Artificial Intelligence, Advanced Algorithms & Applications, Software Engineering, Machine Learning, Database Systems, Linear Algebra, Programming Languages, Automata Theory & Formal Languages

Skills

Programming	Python, Java, SQL/PostgreSQL, LaTeX, Bash, GDScript, REST APIs, PowerShell
Mathematics	Linear Algebra, Differential Equations, Advanced Calculus, Probability Theory, Discrete Mathematics
Software & Tools	AWS (Lambda, S3, EC2, SQS, IAM), Snowflake, Docker, Git, Linux, Godot Engine, VS Code, IntelliJ, MS Office

Projects

CUDA-Accelerated Graham Scan

GPU Programming

- Collaborated in a team of three to implement the Graham Scan algorithm for convex hull detection on point clouds.
- Ported algorithm to the GPU using the CUDA Toolkit, optimizing parallelism and memory transfer to reduce runtime on large sets.
- Rendered visual output to display point clouds and resulting convex hulls, comparing CPU and GPU execution paths.
- Performed runtime benchmarking across various data sizes, analyzing speedup and computational efficiency of the GPU version.

CGI Application Tracker – 2nd Place Finish

UA Innovate Hackathon

- Developed a React-based web application with a responsive and interactive front-end to assist CGI's recruitment process.
- Designed a dual-role authentication portal for seamless UI/UX between student applicants and CGI staff.
- Integrated OpenAI API calls to auto-generate resume feedback, enhancing the interface for HR staff insights.

AI Maze-Solving Bot

Automated Reasoning

- Implemented and tuned A* search algorithms for dynamic maze traversal with real-time visual feedback.
- Led effectively in a team environment, collaborating with other students from diverse backgrounds to achieve project goals.
- Identified challenges and devised creative solutions to optimize the bot's performance, making it adaptable to various mazes.

Extracurricular

Association for Computing Machinery (ACM at UAB), *Member*

https://uabacm.org

- Attend club events and participate in workshops on a weekly or bi-weekly basis