Hayden Outlaw

haydenkoutlaw@gmail.com | 3035173820 | hayden-outlaw | outlawhayden | New Orleans, LA

https://outlawhayden.github.io

Objective: To leverage an intelligent and creative approach to data science, statistics, and modeling to drive innovative solutions and transformative insights.

Work Experience

Tulane Mathematics — ***Algebraic Statistics Researcher*** Aug 2021 - Present

- Researched graphLasso covariance estimator, developed novel algorithm to bypass convex optimization using algebraic geometry and generated meaningful numerical results.
- Presented findings in SIAM 2023 Algebraic Geometry conference at Technische Universiteit Eindhoven in Eindhoven, NL in July 2023 on behalf of Tulane University.

National Center for Atmospheric Research — ***Machine Learning Intern*** May 2023 - Aug 2023

- Streamlined distributed neural network used to decompress cloud particle algorithms in PyTorch to improve performance and decrease computational load, as a part of the NCAR Computational and Information Systems Lab.

WTUL New Orleans 91.5 — ***Station Engineer*** Aug 2021 - Present

- Responsible for the hardware and software architecture of Tulane University's college radio station, including website management, hardware repairs, music archiving, troubleshooting, and sound system design.

Georgia Institute of Technology — ***Biomathematics Researcher*** May 2021 - Aug 2021

- Used NetLogo to design agent-based models of ecological systems including grazing patterns, wind diffusion of signaling chemicals, and population size. Collaborated with teams from Northwestern, Brown, Clemson, Tulane, Georgia Tech, and University of Florida.

Skills

Mathematics

- Studied extensively in statistical inference, probability, stochastic processes, abstract algebra, and calculus, with a specialization in convex optimization and statistical analysis. Fluent in proof construction, arithmetic calculations, and the use of mathematical software.

Computer Programming

- Capable of programming in Python, R, Java, C, Haskell, Mathematica, and Javascript. Experienced in writing deployment code in project repositories, verison control, deployment, and code reviews. Developed personal React homepage hosted on Github.

Machine Learning

- Trained in building a wide variety of classification and regression algorithms in PyTorch, TensorFlow, and SKLearn, as well as benchmarking performance, tuning, and evaluating performance as part of a larger system. Well versed in practical implementation as well as machine learning theory and model complexity. Experienced with natural language processing, explainable artificial intelligence, model selection, and user-centered development.

Data Science

- Extremely experienced in Python-based data science, notebook use, and model design. Capable at every step of the data pipeline, from data collection and cleaning to model design to analysis, including a high-level knowledge of technical probability and statistics, and machine-learning skills.

Cloud Computing

- Able to design, deploy, manage, query, and administrate cloud computing resources, environments, and databases through Microsoft Azure, Amazon Web Services,and Google Cloud. Can program in HPC environments, create multithreaded programs, and account for resource useage.

Education

Tulane University of Louisiana — ***BS Mathematics/Computer Science*** Aug 2020 - May 2024

Bachelor of Science in Mathematics and Computer Science, minor in Philosophy
GPA: 3.91

Background

I am a mathematics and computer science student from Boulder, Colorado presently living in New Orleans, Louisiana. My passion is exploring how data can solve problems and connect people and concepts together by using modern tools and cutting-edge techniques. In my spare time I play trombone; DJ at a local radio station; study philosophy, Spanish, and German; and volunteer around the city of New Orleans.