

Sage Li

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EDUCATION

Georgia Institute of Technology

Master of Science in Computational Data Analytics

Atlanta, GA

Aug. 2024 – Current

Georgia Institute of Technology

Bachelor of Science in Physics

Atlanta, GA

Aug. 2020 – May 2024

EXPERIENCE

Research Intern

NASA Ames Research Center

May 2022 – May 2023

Mountain View, CA

- Managed high performance computing (HPC) resources to simulate stellar fluid dynamics.
- Architected simulation setup pipelines in Python, reducing runtime over older versions by over 70%.
- Introduced new functionality to simulations, allowing consideration of magnetic field effects.
- Utilized Numpy, Pandas, and SciPy to conduct and automate time-series analysis on 100+ TB of data.
- Classified stellar noise with a PyTorch model to reduce stellar observation noise by over 80%.

Undergraduate Researcher

Computational Combustion Laboratory

January 2022 – May 2022

Atlanta, GA

- Leveraged high-performance computing to simulate ramjet combustion dynamics.
- Automated time-series analysis of 100+ GB of raw data using Python and MATLAB.
- Developed a mathematical model to identify critical parameters influencing jet stability.

Mathematics Instructor

Mathnasium of Evans

June 2019 – January 2020

Evans, GA

- Created an engaging learning environment to enhance students' problem-solving skills.
- Provided personalized instruction in arithmetic, algebra, trigonometry, and geometry.

PROJECTS

Hit Error Analysis | *Python, Pandas, Numpy, pymc, tkinter*

- Conducted a bayesian analysis on user hit error in popular online rhythm game "osu!".
- Developed novel algorithms for object detection, improving runtime over popular programs by over 80%.
- Created a GUI-based application for visualizations and to streamline data collection pipeline.
- Constructed a hierarchical Bayesian model in pymc, identifying high-impact parameters on player performance.
- Sampled from the model with accompanying data using Markov Chain Monte Carlo (MCMC) techniques.
- Analyzed data and communicated results clearly with an accompanying academic research paper.

Algorithmic Stock Trading | *Python, Numpy, Pandas, SciPy, PyTorch, Scikit-learn*

- Developed a Python-based strategy backtesting and automated trade submission framework.
- Derived novel indicators for use in technical analysis and trading algorithms.
- Implemented a machine learning based market neutral pair trading strategy utilizing clustering.
- Developed a recurrent neural network (RNN) to predict market regimes and their ideal trading strategies.

Karaoke App | *Python, JavaScript, Spotify API, Async. programming, OpenCV, Firebase*

- Developed a cross-platform automated karaoke application
- Leveraged asynchronous programming to handle concurrent user requests and improve application responsiveness.
- Utilized OpenCV for autonomous interaction with a external applications.
- Integrated Google Firebase and Spotify API for user management and song recommendations.
- Created recommendation models using PyTorch to enhance user experience.

TECHNICAL SKILLS

Languages: Python, SQL, Java, JavaScript, MATLAB

Frameworks & Libraries: NumPy, Pandas, Scipy, Matplotlib, scikit-learn, PyTorch, Django, FastAPI, OpenCV

Tools & Platforms: Linux, Bash, regex, Git/GitHub, Jupyter Notebook, Google Firebase

Data Analytics: Machine Learning, Neural Networks, Time Series Analysis, Computer Vision, Bayesian models

Analytical Skills: Mathematics, Statistics (Bayesian and Classical), Physics (Classical and Modern)

Languages: English, Chinese (Mandarin), Japanese