Alex Preston

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Education

Southern Methodist University May 2022

Bachelor of Science Computer Science

- Cumulative GPA: 3.3/4.0
- Relevant Coursework: Algorithms, Data Structures, Software Engineering, Database Concepts, Assembly, Digital Logic Design, Physics
- *Second Century Scholars Program* (merit-based scholarship)

Experience

ATLAS Collaboration Dallas, TX

Research Assistant August 2020 - Present

- Implementing a Neural Network, using TensorFlow and Scikit-learn, on a Field-programmable gate array to perform jet flavor tagging of subatomic particles.
- Optimizing neural network using QKeras to reduce latency and increase throughput
- Developing Jupiter Notebooks to visualize how neural network processes particle collision images

Lyle School of Engineering Dallas, TX

Teaching Assistant August 2020 - Present

- Taught and Accessed various introductory labs and programming assignments for over 100+ undergraduate students. (Principles of Computer Science, Programming Concepts)
- Mentoring students with C++ and Java Programming, including memory management and File I/O

Securboration Melbourne, FL

Software Engineering Intern May 2019 - June 2019

- Created novel Python micro-service to automatically find the nearest weather station (including redundancy checking when data was not available)
- Fetched weather data from government API based on plane crash date and location resulting in an Excel report that was used to aid accident data in creating visualizations
- Performed data cleanup in Python to increase the quality of weather station data by removing fuzzy duplicates, removing unnecessary columns, and manipulating data when needed

Personal Projects (portfolio: alexpreston.org/portfolio/)

Book Summarizer Dallas, TX

Personal Project May 2020 - Present

- Designed and created a website in Python capable of summarizing articles, scientific journals, and books
- Created database in PostgreSQL to transfer multiple summary lengths to user
- Implemented seven different extractive summarization algorithms in NLTK for users to choose from
- Automated memory management of database in Celery to increase the efficiency of accessing user data.

GP Quantitative Dallas, TX

Personal Project June 2020 - Present

- Worked in a team of three to create a financial analysis website for retail investors to learn about markets
- Designed data visualizations in Pandas, Chart.js, and Matplotlib to help the user discover market trends
- Created scrapers in Python and Node.js to pull alternative market data not available through APIs

News Aggregator Melbourne, FL

Personal Project January 2020

- Created a content aggregator in Python and Django to scrape headlines from various news sites to create a curated news site
- Automated back-end tasks to have scrapers continuously pull new headlines in real-time

Campus Involvement

Robotics Club Dallas, TX

Member January 2020-Present

- Creating an image collection system with Python to extract data from autonomous drone to automatically sort images based on size, orientation, color, and shape to reduce image submission time