**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/](https://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