**Alex Preston**

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**Education**

**Southern Methodist University** **May 2022**

*Bachelor of Science Computer Science*

* + - * Cumulative GPA: 3.3/4.0
      * Coursework: Algorithms, Data Structures, Software Engineering, Databases, Discrete Math, Assembly
      * *Second Century Scholars Program* (merit-based scholarship)

**Experience**

**SMU ATLAS Experiment Dallas, TX**

*Undergraduate Researcher Aug. 2020 - Present*

* Implementing a convolutional 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 Jupyter Notebooks to visualize how neural network processes particle collision images

**SMU Lyle School of Engineering Dallas, TX**

*CS 1342 Teaching Assistant Aug. 2020 - Present*

* Teaching and Assessing 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 - Jun. 2019*

* Created 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 to populate an Excel report that aided in visualization of accident data
* Performed data cleanup in Python to increase the quality of weather station data by removing fuzzy duplicates, deleting unnecessary columns, and manipulating data when needed

**Personal Projects (Portfolio: [alexpreston.org/portfolio/](https://alexpreston.org/portfolio/))**

**Book Summarizer Dallas, TX**

*Independent Project May 2020 - Present*

* Designing and creating a website in Python capable of summarizing articles, scientific journals, and books
* Creating database in PostgreSQL to transfer multiple summary lengths to user
* Implementing 7 different extractive summarization algorithms in Python for user to choose from
* Automating memory management of database in Celery to increase the efficiency of accessing user data

**GP Quantitative Dallas, TX**

*Group Project Jun. 2020 - Present*

* Worked in a team of 3 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**

*Independent Project Dec. 2019 - Jan. 2020*

* Created a content aggregator in Python and Django to scrape headlines of news sites for curated news site
* Automated back-end tasks to have scrapers continuously pull new headlines in real-time
* Designed a responsive mobile version in CSS and Javascript to change layout based on device type

**Technical Skills & Interests**

* **Languages/Technologies:** Back-end development in Python, C++, and Java. Python/SQL Data Analysis & Visualization. Database management in MySQL and PostgreSQL. Experience with TensorFlow and Keras.
* **Interests:** Philosophy (epistemology and logic), space, running, cooking, writing