

## EDUCATION

SOUTHERN METHODIST UNIVERSITY

May 2024

Bachelor of Science in Statistical Science  
Bachelor of Arts in Computer Science  
Bachelor of Business Administration in Finance  
~ **Current GPA: 3.64**

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## SKILLS/CERTIFICATIONS

IT CERTIFICATIONS: CompTIA Network+, Security+, Microsoft Excel Expert

COMPUTER SCIENCE SKILLS:

*Languages:* **TypeScript, Python, R**, Java, C++, SAS  
*Environments:* **Git, Linux, Windows**, Agile, Test-Driven Development

RELATED COURSEWORK: Data Structures, Algorithms, Statistical Computing, Regression

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## CAREER HISTORY

SMU Lyle School of Engineering – Control Room Technician

January 2023-Present

- ~ Monitor and operate studio classrooms and control rooms
  - ~ Ensure maximum uptime by troubleshooting audio and video difficulties in classrooms
  - ~ Transfer class recording to and from server database for distance education students
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## SELECTED PROJECTS

<https://github.com/cullenwatson>

- Full-Stack Project
  - ~ Scrum master of a team of 6 to implement a movie reviews/ratings website
  - ~ Created the project using React and Mantine for the frontend, with Express, Prisma, and MySQL for the backend
  - ~ Deployed the project to an AWS EC2 instance with CI/CD, and made it accessible on the internet (<https://flickaid.com>)
- JSON Search Engine
  - ~ Wrote a search engine to search for most relevant terms within a corpus of finance articles
  - ~ Implemented HashMap and AVL-Tree data structures to serve as backend for inverted file index of 100,000 finance articles
  - ~ Used TF-IDF Statistic to order the results of each query, supporting set Union, Intersection, and Not operations
- Community Detection
  - ~ Implemented the Girvan-Newman algorithm using the Boost Graph Library to detect communities in a GraphML network
  - ~ Maximized the inter-cluster distance between communities by repeatedly calculating edge betweenness
  - ~ Tested the algorithm with the Football Conference 2000 Dataset and discovered the 11 conferences and their associated teams
- Tweet Sentiment Predictor:
  - ~ Analyzed the frequency of words and sentiments in 20,000 tweets to develop a classification scheme
  - ~ Used the classification scheme to predict the sentiment of 10,000 tweets, achieving an accuracy score of 68.1%
  - ~ Created data structures such as vectors and strings from scratch to store information such as words and frequencies
- Robotics Competition:
  - ~ Built a functional robot with a team of 5 using servos, omni wheels, and sensors to navigate an obstacle course
  - ~ Calibrated sensors to accurately measure the inclination of a ramp and obtain the salinity of a water source
  - ~ Managed the project utilizing the agile methodology to complete deliverables within 5 sprints