Mason McCallum

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Education

Southern Methodist University   **Dallas, TX**
Ph.D. in Computational and Applied Mathematics, 3.8   *Aug 2021–Present*

Tartleton State University   **Stephenville, TX**
B.S. in Computer Science , GPA: 3.6   *Aug 2017– Dec 2020*
B.S. in Mathematics

Skills

Programming Languages: Python, C/C++, R

Database: SQL, Postgres, SQLite

Dev Tools: Ubuntu, Docker, AWS, Git, Vim, GPU programming, OpenGL, OpenCV

Programming Practices: CI/CD,Test Driven Dev, OOP, Agile

Mathematical Modeling: Probability and Statistics, Multivariate calculus, linear algebra, Numerical Methods, Dynamical Systems

Projects

Contact Binary Star Simulation   **Stephenville, TX**
Lead Developer for Tarleton HPC lab   *Dec 2018–Dec 2020*

- developed a simulation engine to explore an unexplained cosmological phenomenon
- used Nvidia GPU's for the acceleration hardware and openGL for graphics
- please see personal website in the header for more details

Ramsey Theory   **Stephenville, TX**
Research Assistant   *Dec 2017–Nov 2018*

designed a heuristic to solve the open math grouping problem on a series of Nvidia GPUs

Experience

Texas A&M Agrilife   **Stephenville, TX**
Bioinformatics Research Assistant   *Aug 2019–Jun 2021*

- created a bioinformatic pipeline to aid in the classification and analysis of microbial communities
- analyzed 30+ GB datasets
- administered 4 linux desktops used by my team

Burlington Northern Santa Fe   **Fort Worth, TX**
Data Analyst Intern   *Summer 2019*

- developed a clustering algorithm to help BNSF classify emergency train brake events
- led a team to create computer vision software to replace radar speed sensors on BNSF tracks
- designed a reporting tool for the root cause analysis team

Awards

NVIDIA GTC 2020: Accepted to present my research   *San Jose, CA (held virtually)*

First Place Oral presentation: Meeting of Texas Academy of Science Physics section   *2019*

Eagle Scout: Boy Scouts of America   *2015*