(919) 797-4409
Durham, NC
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Cal Nightingale

Software Engineer / Data Scientist

www.calnight.in/gale
GitHub: CalNightingale
LinkedIn: cal-nightingale

Hello! I am a Junior at Brown University studying Computer Science and Applied Mathematics. My interests include mathematical modeling, optimization, machine learning, and game theory, among others. I currently play for Brown's Ultimate Frisbee team, Brownian Motion, which finished second overall at College Nationals this past May.

Skills

Languages	Python, C++, Java, C, Bash, MATLAB, HTML, CSS
Tools	Git, SFTP, LaTeX, Vim, tmux, Markdown, Make, Jupyter
Database Systems	PostgreSQL, SQLite, AWS Athena & S3

Technical Experience

Software Engineering Intern **Aug 2020 — Sep 2022**
N1 Health *Boston, MA*

- Implemented core N1 Data Lake pipeline, standardizing data ingestion process and reducing formatting errors at analysis time by 80%. Automated parsing and cleaning client data into csv, writing to SQLite databases and parquets, and uploading data to AWS S3
- Created utilities to collect and visualize aggregate statistics and run background analysis on parsed client data to expedite downstream data science process, decreasing time to create deliverables by 20%
- Decreased onboarding time by 1 week by refactoring N1 Data Lake and Model engine from their own repositories into separate python packages within N1 master repository, drastically simplifying code base and increasing code readability

Research Intern **Summer 2018**
North Carolina School of Science & Math *Durham, NC*

- Researched, implemented, and compared the performance of various algorithms applied to the Traveling Salesman Problem
- Final presentation can be found here

Software Development Intern **Summer 2017**
Pratt School of Engineering, Duke University *Durham, NC*

- Wrote C code deployed to latrines in Kenya and the Philippines to regulate their digestive processes and transmit real time data for the Anaerobic Digestion Pasteurization Latrine Project
- Decreased downtime frequency by 30% by implementing logging functionality

Education

Bachelor of Science in Applied Mathematics & Computer Science **2024 — Expected**
Brown University *Providence, RI*

- Cumulative GPA: 3.90
- Relevant CS Coursework: Data Science, Cryptography, Graphics, Machine Learning, Systems, Data Structures & Algorithms
- Relevant Math Coursework: Linear Algebra, Probability & Statistics, Applied ODEs, Applied PDEs, Numerical Optimization

Certificate of Secondary Education **Jun 2019**
C E Jordan High School *Durham, NC*

Projects

Filmsplice **Python**

- Wrote a utility to automatically download ultimate game film clips, splice them together, and upload them to YouTube
- See details at filmsplice.calnight.in

Minecraft-Esque Procedural Terrain Generation **C++**

- Implemented block rendering using OpenGL pipeline
- Implemented biome shape and type assignment using Voronoi Diagrams and Perlin noise
- See details on GitHub

Brownian Motion Website **HTML/JS**

- Responsible for maintaining the Brown Ultimate website

Activities

Social Chair — ***Brown Ultimate Frisbee*** **2020 — Present**
National Merit Scholarship Finalist **2019**
Captain and President — ***Jordan High Ultimate Frisbee*** **2018 — 2019**
Captain and Treasurer — ***Jordan High Ultimate Frisbee*** **2017 — 2018**