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Durham, NC
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Cal Nightingale

Software Engineer / Mathematician

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, machine learning, and game theory, among others. Outside of academics, I enjoy reading, skiing, watching basketball, video editing and playing ultimate. I currently play for Brown's team, Brownian Motion, which finished second overall at College Nationals this past May. Please reach out with any questions!

Skills

Languages	Python, C++, Java, C, Bash, MATLAB, HTML, CSS
Tools	Git, SFTP, LaTeX, Vim, tmux, Markdown, Make
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, involving parsing client data into csv, processing csv to remove bad data, writing data to SQLite databases and parquets, and uploading data to AWS S3
- Wrote code to collect and visualize aggregate statistics and run background analysis on parsed client data to streamline downstream data science process
- Migrated N1 Data Lake and Model engine from their own repositories into N1 master repository, including refactoring both into separate python packages, to drastically simplify code base and increase 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*

- Contributed to the Anaerobic Digestion Pasteurization Latrine Project, designed to "provide clean, sustainable, odor-free latrines for communities of 20-50 people with no water supply or energy source required"
- Wrote C code deployed to latrines in Kenya and the Philippines to regulate their digestive processes and transmit real time data

Education

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

- Cumulative GPA: 3.94
- Relevant CS Coursework: Graphics, Machine Learning, Systems, Data Structures & Algorithms, Object Oriented Programming
- Relevant Math Coursework: Linear Algebra, Probability & Statistics, Applied ODEs, Applied PDEs, Numerical Solutions

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

Projects

Filmsplice **Python**

- Coded a utility for automatically downloading ultimate game film clips, splicing them together, and uploading them to YouTube
- See details at filmsplice.calnight.in

Games **Java**

- Coded multiple mobile and classic games, including Doodle Jump, Pacman, and Tetris

Shell **C**

- Coded a basic shell capable of parsing, forking, and executing user commands

Brownian Motion Website **HTML**

- Responsible for maintaining the Brown Ultimate website

Activities

National Merit Scholarship Finalist **2019**
Captain and President — ***Jordan High Ultimate Frisbee Team*** **2018 — 2019**
Captain and Treasurer — ***Jordan High Ultimate Frisbee Team*** **2017 — 2018**