Kaitlyn Williams

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Education

Brown University, *Sc.B. Applied Mathematics-Computer Science*, Providence, Rhode Island
Expected Graduation May 2024

- **Relevant Applied Math Courses:** Introduction to Numerical Solutions to Differential Equations, Information Theory, Discrete Structures/Probability, Applied ODE's, Applied PDE's I and II, Multivariable Calculus, Linear Algebra, Statistical Inferences
- **Relevant Computer Science Courses:** Data Science, Machine Learning, Deep Learning, Software Engineering, Fundamentals of Computer Systems, Program Design with Data Structures and Algorithms, Introduction to Object-Oriented Programming and Computer Science
- **Programming Languages:** Java, Python, HTML, JavaScript, CSS, C, C++, SQL, MATLAB, React
- **Spoken Languages:** English and Spanish

Greater Atlanta Christian School, Norcross, Georgia

- 2020 Graduate - Salutatorian and Scholar Athlete

Notable Projects at Brown

Movie Streaming Recommender

- Utilized statistics and machine learning algorithms to analyze three movie datasets combined using SQL and Pandas
- Tested research hypotheses concerning the relationships between streaming accessibility, language accessibility, and ratings
- Implemented two k-means clustering algorithms: one to automate a recommender for streaming services based on movie preferences, and the other to predict the combination of keywords in movies that lead to the best ratings

NYC Education Disparity Application

- Collected school funding and graduation rate data, as well as teacher and student demographics of schools and districts in the New York City area from various APIs
- Developed the back-end using Spark in JavaScript to retrieve information from different APIs containing information about the schools and school districts
- Created the front-end using React to provide parents, teachers, and policymakers an easily navigable display using Mapbox to show a map of New York City, overlaying the school districts with color-coding and markers to identify all the school locations

Search Engine

- Implemented term frequency and page rank algorithms to create a search engine in Python
- Designed indexer that utilized nested dictionaries to process texts from Wikipedia pages, scored words based on term frequency for each page, and calculated page rank for each page in order to return top ten most relevant results for user

Extracurricular

Brown Women's Soccer August 2020-Present

- Played as a defender on Brown's Varsity Women's Soccer team, contributing to three consecutive Ivy League Championships 2021, 2022, and 2023
- Recipient of the R.I.S.E. award for Resilience, Integrity, Selflessness, and Excellence for the 2023-2024 season, acknowledging a player who has dealt with adversity, but shows their commitment to the team through their effort, mental fortitude, and moral compass as they navigate the demands of being a student athlete.

Student Athlete Advisory Committee (SAAC) August 2022-Present

- Served as the Brown's Varsity Women's Soccer representative
- Advised the athletic department of recommendations to better the student athlete experience and increase community engagement

Meiklejohn Peer Advisor August 2022-Present

- Upper class advisor for six first-year students in 2022-2023 academic year
- Upper class advisor for four first-year students 2023-2024 academic year

Data Science Fellow August 2023-December 2023

- Collaborated with Brown faculty members to integrate Data Science into their courses
- Created course content with two professors in Brown's Center for Biomedical Informatics that teaches students how to apply the data science pipeline to health data, including learning how to read and access the data, cleaning the data, learning which algorithms are best for the analysis needed, and how to interpret results in a meaningful way

Work Experience

SMT, SportsMEDIA Technology – Data Science Intern January 2024-Present

- Writing computer algorithms in Python to analyze different events within sporting matches
- First project: determining the probability of a server hitting an ace or double fault at each point score of a tennis match
- Current project: in a tennis match, differentiating playing styles through a clustering algorithm, while determining which data points are important to classifying playing styles and finding similarities between players