Jack Hamilton

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ABOUT ME

Ambitious third year Computer Science Major and Data Analytics Minor who is looking for an opportunity in working on computational analysis within quantitative and financial fields. Possessing a strong foundation of programming and statistics, complemented by experience working with machine learning tools, algorithms, and analyzing big data. Known for exceptional organizational skills, quick learning ability, and effective communication of complex results. Adaptable and eager to apply technical expertise to real-world challenges in a professional setting.

SKILLS

Python	Data Analysis (Pandas, MySQL, and Excel)	Strong communication skills
SQL	Data Visualization (matplotlib and plotnine)	Desire to learn and grow
Java	Modeling Dynamical Systems	Exceptional organizational skills
HTML/CSS	Monte Carlo Simulations	Great problem solving skills

WORK EXPERIENCE

Artificial Intelligence/Machine Learning Research Intern at Wake Forest School of Medicine

Spent the summer of 2025 as an AI/ML Research Intern at Wake Forest School of Medicine's Center for Artificial Intelligence. My work included conducting research on cardiovascular EHR Data, improving Apple Watch signals, and learning about applying artificial into healthcare. My main project was working to improve the correlation of raw Apple Watch ECG readings to the signals to Clinical Lead I ECG using different Convolutional Neural Network models. This experience was very rewarding and helped cultivate my knowledge of Deep Learning in the medical sector.

PERSONAL PROJECTS

Modeling the System Dynamics of Malaria in Rwanda: malaria-research.ipynb

I researched the contraction patterns of malaria and the relationship between the disease in humans with mosquitoes. I first created SIR models and wrote differential equations to replicate the lifecycle of malaria in both humans and mosquitoes. Then I used ODEint in the scipy package and created models to simulate what malaria will look like in Rwanda for the next 60 months. After this step, I took into account that a vaccination will be made, so I adjusted my equations and function for the models to display graphs that represent what malaria will look like in Rwanda for the next 60 months.

Midterm Election Predictions for the Senate: predicting-the-mid-term-elections.ipynb

For this project, I analyzed the 2024 U.S. Senate elections, focusing on swing states. I aggregated polling data from FiveThirtyEight, then cleaned and prepared it to determine candidates' odds of winning in each state. Using numpy's random.normal function, I developed an equation to account for margin of error in the polls. Finally, I implemented stochastic modeling methods to predict Senate race outcomes in key swing states, providing a data-driven forecast for the 2024 election.

EDUCATION & CERTIFICATIONS

Hendrix College (August 2022 - Present)
Computer Science Major & Data Analytics Minor

Universidat Pompeu Fabra (Spring 2025)
Studying Data Science in Barcelona

KEEN Entrepreneurship Certification
Completed all of the "Learn" certifications

EXTRACURRICULAR ACTIVITIES

Hendrix College Men's Soccer
Three year letter winner of NCAA Men's Soccer program

Hendrix Programming Team
Meet every week to program

Hendrix Volunteer Action Committee
Organized volunteering on weekends