Sheel Vakil

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Education

Rutgers University - New Brunswick *GPA: 3.94/4.00*

B.S. Computer Science and Mathematics *May 2023*

- **Relevant Coursework:** Data Structures and Algorithms, Probability Theory, Differential Equations, Multivariable Calculus, Computer Architecture, Math Reasoning, Intro to Linear Algebra, Intro to Statistics

Work & Leadership Experiences

Rutgers Center for Advanced Infrastructure and Transportation

Undergraduate Research Assistant *November 2020 – Present*

- Engineering a web application using **Python's Flask** to compute bio-invasion risk between global shipping ports to enhance global shipping decisions and minimize bio-invasion risk
- Implementing **Pandas** to organize and process large data files of shipping ports and routes information to compute results
- Creating an interactive bar chart using **Chart.js** on the web application with a user's data file input to visualize bio-invasion risk and rank results for high risk shipping ports

Bluebonnet Data

Data Fellow - Florida House District 26 *July 2020 – November 2020*

- Collected and organized Census data using **Python** and **Pandas** to provide a district demographic analysis and help the campaign team better understand the district's demographics
- Created graphic data visualizations using **Plotly** and **Matplotlib** with district voter data collected from the NGP VAN database to find and target voters within the district, resulting in an increase in voter outreach efficiency for the campaign
- Analyzed past election data to gain insight into which precincts lack voter turnout and which precincts to focus campaign strategies on, resulting in a 26.7% increase in voter turnout from the 2018 general election

Rutgers Peer Mentor Program

STEM Physical Sciences Peer Mentor *August 2020 - Present*

- Lead and provide mentorship to 11 STEM major students during their first-year transition to Rutgers University
- Coordinated personal mentoring sessions and compiled individualized resources for mentees based on their academic goals
- Executed mentoring opportunities by hosting academic/professional focused workshops with professors and guest speakers

Code Ninjas

Programming Tutor and Camp Coordinator *May 2019 – August 2019*

- Created and executed lesson plans for 50+ students on **HTML/CSS** and **JavaScript** to create a personal website
- Increased tutoring enrollment by 10% by designing a flexible curriculum based on each student's demonstrated ability

Junior Achievement of New Jersey

Project Coordinator Intern *October 2017 – May 2019*

- Launched and managed HackJA in partnership with Major League Hacking for 125+ high school student, resulting in a bi-annual hackathon event with sponsorships from corporate technology companies
- Organized a statewide business competition for 500+ high school students with corporate company sponsors and used social media to increase registration and participation by around 12%

Projects

Clippy | HackRU 2020 • Education Track Winner

- Developed a Discord Study Bot using **Python** with various study features to aid students during their study sessions
- Implemented the **Google Search API** and **Wolfram Alpha API** for the Bot to include google search and math functionalities
- Created an algorithm with user friendly commands for the user to play Hangman against the Bot during study breaks

AI Connect Four | Personal Project

- Developed an interactive AI vs Player Connect Four game using **Java** and implementing an object-oriented solution
- Implemented an AI using a modified minimax algorithm and increased its run-time efficiency with alpha-beta pruning

Tweet/Stock Sentiment | Personal Project

- Engineered an algorithm using **Python** to measure the volatility of a company's stock based on Twitter sentiment
- Utilized the **Twitter API** and **Yahoo Finance API** to collect data, alongside **Tweepy** and **TextBlob** libraries to analyze the data

COVID-19 Visualizer | Personal Project

- Designed a web application using **Python's Flask** framework to visualize and compare COVID-19 data between countries
- Converted real-time data retrieved from the **COVID-19 API** into visual pie charts using **Matplotlib**

Skills

- **Programming:** Java, Python, C, HTML/CSS, JavaScript
- **Tools:** Flask, Matplotlib, Pandas, Plotly, Tweepy, TextBlob, Bootstrap