

Vatsal Bhargava

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EDUCATION

Northwestern University – McCormick School of Engineering
Bachelor of Science in Computer Science, Minor in Mathematics

Evanston, IL
Expected June 2024

- GPA: 3.94/4.00 | Dean's List 6x
- Relevant Coursework: Data Structures & Algorithms, Linear Algebra, Statistics, Multivariable Calculus, Micro/Macroeconomics, Artificial Intelligence, Discrete Math, Web Development, Design & Analysis of Algorithms, Operating Systems (Winter 2022), Distributed Systems (Spring 2023), Relational Databases (Winter 2022)

EXPERIENCE

KBR

Fulton, MD

Software Engineering Intern – Cloud Edge Optimization for Autonomous Swarms (CLEO) June 2022- August 2022

- Developed sample applications for edge computing in Rust using test-driven development: 4th order differential equation solver and various neural nets to test validity of offloading algorithm and edge node performance.
- Analyzed and documented information from 15+ research papers to assist team in decision making processes regarding edge computing techniques and relevant technologies, primarily Docker and WebAssembly as containers for edge
- Presented bi-weekly progress updates showcasing code progress via React App and WebAssembly to Space and Science Program then fielded in-time questions from senior leadership and relevant contractors

Northwestern University Football Analytics
Data Analyst – 2 Minute Warning

Evanston, IL
June 2021- April 2022

- Extracted relevant features from 1,000+ row historical data sets then preprocessed and produced tendency reports with in-depth analysis and personal insights using industry standards tools such as Jupyter, Pandas, and Plotly
- Organized and led 8-12 person meetings with coaching staff and analysts to discuss status of current reports and future areas of interest to provide competitive advantage to Northwestern coaches by narrowing scope of film sessions

PROJECTS

Object Oriented Programming:

Constructed several interactive games in Python and C++ with a strong emphasis on optimization and object-oriented principles. Ensured all features of UI flowed smoothly and accurately whilst maintaining image resolution and physics. Games developed: Othello, Flappy Bird, and Brick Breaker.

Web Scraper:

Automated data scraping from numerous online sources to detect arbitrage opportunities in alternate investment strategies. Gained experience with Selenium and data processing techniques. Worked alongside small team to develop components of scraper, practiced with git and Linux to improve team dynamics and product ease of use.

Sentiment Analysis:

Utilized Bayesian classifiers to create a model to accurately discriminate between positive and negative movie reviews. Used cross validation and feature extraction to improve model performance. Transformed a corpus of text into input for a machine learning model utilizing NLP techniques.

Tweet Filtration Bot:

Leveraged Twitter API v2 through open-source library Tweepy to filter relevant NBA injury news by reducing number of notifications by 70% with less than 3 second latency. Integrated Discord API to push notifications to users after processing data. Made application cloud compatible to run on AWS and seamlessly push 100+ notifications to 30 members.

ADDITIONAL

Languages: Python, Rust, C++, C, MATLAB, HTML, CSS, JavaScript, SQL

Systems/Frameworks: Git, Linux, NumPy, Pandas, Tweepy, Flask, Jupyter, Selenium, WebAssembly, Jira

Interests: Poker, Golf, Podcasts, Basketball, Fishing, Weight Lifting, Videogames, Entourage

Involvement: Pi Kappa Alpha – Philanthropy Chair, NU Relay For Life (American Cancer Society) – Recruitment Chair, Blockchain Consulting Group, Nerds 2 the Rescue (K-5 Tutoring) – Founder