Vatsal Bhargava

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EDUCATION

Northwestern University – McCormick School of Engineering **Evanston, IL**

*Bachelor of Science in **Computer Science**, Minor in **Mathematics*** *June 2024, Cum Laude*

- **GPA:** 3.88/4.00
- **Relevant Coursework:** Machine Learning, Deep Learning, Data Structures & Algorithms, Operating Systems, Scalable Software, Linear Algebra, Artificial Intelligence, Web Dev, Relational Databases

WORK EXPERIENCE

Bloomfilter (Series A Startup) | Django, React, TypeScript **Chicago, IL**

Software Engineering Intern *July 2024-Present*

- Updated Django-based software development metrics for 100% of clients, enabling insights for custom date ranges. Highly requested feature by potential customers such as McDonald's and Uber.
- Rewired React frontend to utilize new capabilities while resolving bugs and increasing platform flexibility.

Alarm.com | C#, JavaScript, Ember, MySQL **Tysons, VA**

Software Engineering Intern – Access Control *June 2023 – August 2023*

- Reduced potential security breaches by 12% by developing proactive access control security measures
- Managed full-stack, from UI additions to C# backend and MySQL database modifications.
- Enhanced Mercury Hardware integration reliability by 10% with refactored controller interactions.

KBR | Rust, Python, WebAssembly, React **Fulton, MD**

Software Engineering Intern – Cloud Edge Optimization *June 2022 – August 2022*

- Developed neural networks and RK4 using Rust to test the validity of our edge distribution algorithm.
- Analyzed 10+ research papers to inform Cloud Team on containers for edge computing Docker vs. WebAssembly.

Northwestern University Football Team | Python, NumPy, Pandas **Evanston, IL**

Data Analyst *June 2021 – April 2022*

- Extracted and analyzed features from CFB datasets, producing actionable reports using Pandas and Plotly.
- Led a team of 4 coders, helped to optimize film sessions, and provided a competitive advantage to coaches.

PROJECTS

NFL Spread Predictor | PyTorch, CUDA, Data Engineering: *October 2023 –March 2024*

- Spearheaded the development of an NFL spread model using Vegas betting lines and historical games.
- Using LSTM architecture, achieved an accuracy of 59%, clearing the 52.4% threshold of betting profitability.

NBA Newsletter | OpenAI API, React, Selenium: *March 2023 – June 2023*

- Developed a bet analysis app with OpenAI and NBA API, delivering a summary of bets based on user input.
- Built frontend with React, backend in Python, and Firebase for data storage. Awarded "Best Project in Class".

Tweet Filtration Bot | EC2, Tweepy, Discord WebHook: *July 2022 – August 2022*

- Leveraged the Twitter API to build a bot that filters NBA injury news, reducing notifications by 70%.
- Integrated with the Discord API and AWS to support 100+ notifications to a 75-member group.

ADDITIONAL

Programming Languages: Python, Rust, C++, C#, Java, C, HTML, CSS, JavaScript, TypeScript, SQL
Tools/Frameworks: Git, Linux, NumPy, AWS, Pandas, REST, Selenium, Jira, Ember.js, PyTorch, CUDA
Involvement: Pi Kappa Alpha, NU Relay For Life, Kappa Theta Pi, Blockchain Club, Chess Club