KUSH VACHHER

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EDUCATION

B.S. Computer Science, University of Maryland - College Park, MD — Expected May 2026
Minor: Mathematics; Track: Machine Learning
Relevant Coursework: Data Structures, Algorithms, Computer Systems, Organization of Programming Languages.
GPA: 3.8.

EXPERIENCE

Capital One — June 2024 - Present
Software Engineering Intern — *Richmond, VA*

- Led the migration of Internal API to Serverless AWS Fargate, enhancing operational efficiency and reducing costs by 31%
- Developed and utilized deep knowledge of containerization to build out Bogiefiles and deploy cloud-based resources

xFoundry@UMD — January 2024 - Present
Product Engineer — *College Park, MD*

- Chosen among 30 students for a 15-month interdisciplinary program focused on developing a Minimum Viable Product to tackle the grand challenge of school safety
- Leveraged Artificial Intelligence Tools for precise event detection and swift alerts, supported by seamless cloud integration for secure data storage and sharing with law enforcement

UMD FIRE — August 2022 - December 2023
Sustainability Analytics Researcher — *College Park, MD*

- Developed an advanced algorithm in R to process and analyze wind data using sophisticated mathematical techniques, enhancing the accuracy of pollution impact studies
- Collected, cleaned, and wrangled large datasets, enabling precise regression analyses to assess the relationship between air pollution and violent crime rates in Baltimore City

PROJECTS

Stroke Detection Analysis — *Python, Pandas, NumPy, Scikit-learn*

- Engineered a stroke prediction model with data visualization and analysis, integrating confusion matrices to assess performance
- Employed machine learning algorithms such as Logistic Regression, Random Forest, and K-Nearest Neighbors
- Achieved over 90% accuracy with hyperparameter tuning and oversampling technique

University Registration System — *Java*

- Built a highly-scalable registration system enabling course management and student tracking
- Implemented multi-threading for parallel processing, enhancing system efficiency by 33%

Grocery Splitter — *Python, TKInter, Node.Js, Express*

- Developed a desktop application using Python, along with a web-based version using Javascript, for a platform facilitating collaboration to divide shopping expenses among multiple users

SKILLS

Programming Languages	Java, Python, C, OCaml, JavaScript, Racket, SQL, Rust, HTML/CSS, R
Frameworks/Libraries	Node, React, Pandas, NumPy, Express, D3, TKInter, OpenCV, Scikit-learn
Tools/Technologies	AWS, MongoDB, Docker, Git, UNIX/Linux, Oracle
Soft Skills	Ethical Research, Public Speaking, Teamwork, Leadership