

Aditi Vakeel

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EDUCATION

North Carolina State University, Master of Computer Science

Aug 2022 – May 2024

Coursework: Software Engineering, Algorithms, Object Oriented Design and Development, DBMS

Sreenidhi Institute of Science and Technology, Bachelor of Technology in Computer Science and Engineering

Aug 2018 – Jun 2022

Coursework: OS, Cloud Computing, Big Data Analytics, Agile Software, Automation and Testing, Data Warehousing

SKILLS

Languages: Python, C++, Java, JavaScript, Typescript, SQL, C, R, C#, .NET Core, Perl

Web: HTML, CSS, ReactJS, NestJS, NextJS, RESTful API, Node, Express.js, Angular, Vue, GraphQL, Ruby on Rails, UI/UX, Figma, Git

Cloud and Databases: MongoDB, Firebase, MySQL, MariaDB, Docker, Kubernetes

Machine Learning: Pandas, NumPy, Pytorch, NetworkX, Keras, Matplotlib, OpenCV, Flask, MATLAB, PowerBI, Excel

PROFESSIONAL EXPERIENCE

Software Development Engineer - Research Assistant, NC State University, Raleigh, NC

Dec 2023 – Present

- Created robust and intuitive full-stack web architecture for Probabilistic Risk identification (PRA) and quantification software.
- Redesigned the application using **ReactJS**, **Typescript**, **Zustand**, and **MongoDB**, optimizing user experience and efficiency by **30%**.
- Designed and deployed high-performance and scalable **RESTful APIs** using **Nest.js**, improving system reliability by **40%**.
- Performed E2E, component, and backend tests using Cypress, Playwright, and **Jest**, enhancing reliability and performance.
- Authored detailed documentation and system specifications, outlining development processes and code standards, ensuring consistency.
- Wrote clean, readable, and optimized code, improving code maintainability and reducing bugs.

Data Scientist - Research Assistant, NC State University, Raleigh, NC

Jan 2023 – May 2023

- Leveraged **Python** to automate over **15+** data processes, decreasing analysis latency by **80%**.
- Improved data models by enhancing predictive accuracy through multivariate regression and spatial analytics.
- Built **dashboards** and visualizations to communicate cyclone forecasts and land resilience studies to stakeholders effectively.

Customer Success Engineer Intern, Rubrik, Bangalore, India

Feb 2022 – Jul 2022

- Collaborated with **100+** global storage & backup clients, crafting personalized tech solutions with a **95%** satisfaction rate.
- Enhanced tools for gathering and analyzing system logs within a distributed system using **Perl**, resulting in a **25%** reduction in analysis time.
- Conducted in-depth reviews of alerts, implementing action plans for known software problems using **.NET** core, **Graphana** shrinking downtime.
- Documented knowledge-based articles on frequent issues in **Confluence** using Jira stats, reducing repeated inquiries by **15%**.
- Resolved 50+ customer-reported Rubrik CDM issues across **Linux**, networking, and **VMware**, using strong problem-solving skills.

Full Stack Developer Intern, Food Parrot, Hyderabad, India

May 2021 – Jul 2021

- Architected robust web and mobile interfaces using **ReactJS** and **React Native**, integrating tightly with back-end to maintain a **90%** API uptime.
- Optimized front-end performance, reducing page load times by **10%** through strategic **prefetching** and **asynchronous API** calls.
- Improved back-end efficiency by implementing **Redis** caching strategies in the **Node.js** application, significantly speeding up CRUD operations.
- Enforced Accelerated Mobile Pages (**AMP**) for mobile screens, directly contributing to a **25%** surge in mobile search traffic.
- Participated in **agile** sprints, stand-ups, and retrospectives, driving continual process improvement and fostering a feedback culture.

ACADEMIC PROJECTS

Cloud-based Expense Auditor (Top 5 in the class)

- Created a multi-user **Android** app to track and share expenses with real-time SMS and email alerts, web scraping & more.
- Integrated with **Firebase** for authentication, secure data storage, and optimized **CI/CD** pipeline.
- Deployed a **Python**-backed Telegram chatbot for similar functionalities and **MongoDB** storage.

Book Shopping System

- Built an online book shopping application leveraging **Ruby on Rails**, **MySQL**, and **MVC** architecture with features like race condition & more.
- Dockerized and deployed the application on **AWS EC2** for seamless scalability and accessibility.

Parking Management System

- Designed and implemented a database-backed management system using **SQL** for **MariaDB**, normalized to 3NF/BCNF.
- Built transactional applications in **Java**, leveraging **JDBC** to interface with the database.
- Utilized E/R modeling and focused on efficient queries, integrity constraints, and robust transaction logic.

Information Diffusion in Eating Disorder Communities

- Engineered an optimized **Linear Threshold Model** to analyze propagation dynamics within subgraphs of the network.
- Devised a novel algorithm leveraging weighted edges and centrality metrics to quantify and evaluate the influence factors in the diffusion processes within online social networks.

Parkinson's Disease Prediction

- Developed a system to predict Parkinson's disease with the subjects' voice database.
- Integrated three ML algorithms (**SVM**, **KNN**, and **Naive Bayes**) through an Ensemble Hard Voting Classifier, resulting in optimized model performance.

PUBLICATIONS AND CERTIFICATIONS

- Published a research paper - **Machine Learning Models for Predicting and Clustering Customer Churn Based on Boosting Algorithms and Gaussian Mixture Model**, at the 2022 IEEE -International Conference of Advancement in Technology.
- Data Management, Visualization, and Analysis Tools** Certifications - Wesleyan University.
- Java for Andriod** - Wesleyan University.