

# Rizwan Syed

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## EDUCATION

### State University Of New York At Buffalo

Master of Science in Computer and Information Science

New York, USA  
Aug 2023 – Dec 2024

**Coursework:** Data Base Management Systems, Analysis of Algorithms, Operating Systems, Data Intensive Computing.

### Sathyabama University

Bachelor of Science in Computer Science and Engineering

Chennai, India  
Jun 2019 - May 2023

**Coursework:** Data Structures, Object Oriented Design, Cloud Computing, Code-Optimization and Debugging.

## SKILLS

**Programming Languages:** Java, Python, JavaScript, TypeScript, SQL, C++, HTML, CSS, JSON, GraphQL, XML, C#.  
**Frameworks:** React JS, Spring boot, PyTorch, CDK, Redux, NodeJS, GitHub, Bootstrap, Vue, React, Model-View-Controller (MVC).  
**Database & Cloud:** MySQL, MongoDB, SQL Server, NoSQL, PostgreSQL, Hadoop, AWS.  
**Tools:** Git, Selenium, PyCharm, Swagger, Visual Studio, IntelliJ, Linux, GDB, REST API, Kubernetes, Dynatrace.

## PROFESSIONAL EXPERIENCE

### University at Buffalo, The State University of New York

New York, USA

#### Student Researcher (Machine Learning)

Jan 2024 - Sept 2024

- Researched strategies to optimize energy efficiency in **Large Language Models** (GPT-2), by exploring dynamic techniques such as Quantization, Distillation and Low-Rank Factorization and then developed an interactive UI to visualize and communicate these optimizations effectively.
- Optimized GPT-2's energy efficiency using quantization, reducing CO2 emissions by 19.8% with minimal impact on performance, and explored the synergy of distillation and quantization, achieving a 45.2% emission reduction while demonstrating a trade-off between energy efficiency and model accuracy with a 57.4% increase in perplexity.
- Conducted a thorough analysis of code changes, handled debugging and deployments, driven by the goal to minimize disruption and prevent negative impact on the system, and developed a UI to track and display the system's stability and performance metrics throughout the process.

### Dell Technologies Inc

Hyderabad, India

#### Dell Campus Ambassador

Feb 2023 - Aug 2022

- Utilized **SQL** and **Power BI** to analyze and present key data insights, highlighting trends and anomalies to support strategic decision-making, leveraging **Azure Functions** and **AWS Lambda** for event-driven automation, streamlining student engagement tracking and reducing analysis time by 75%.
- Represented Dell Technologies across the university through digital marketing strategies, successfully driving student engagement via data-driven decision-making and workshops. Coordinated with university and Dell teams to execute events, enhancing brand visibility and fostering a tech-savvy culture among students, earning an award for outstanding contributions.

### Vaya Group

Chennai, India

#### Software Developer

Jun 2022 - May 2022

- Developed a sophisticated **supplier onboarding form at vipani.ai** using a microservices-based architecture with **Java** and **Spring Boot**, spanning tens of pages, enabling suppliers to provide comprehensive details about their products and services necessary for **effective B2B procurement, directly contributing to business growth through faster procurement cycles and stronger supplier relationships**.
- Developed a robust file searching system for high volume of suppliers across the network, enabling users to quickly and easily locate necessary files and streamlined the **supplier management process**.
- Implemented a **Trie-based algorithm** for file search utilizing **JavaScript, React** and, caching at multiple stages to achieve optimal search performance with a **p95** latency under 10 milliseconds over million files.
- Led secure migration of terabytes of confidential data from on-premises storage to Native AWS Stack, using Lambda, DynamoDB, and S3, ensuring system availability and integrity throughout the process.
- Performed code review, managed **Jenkins** based CI/CD pipeline, **mentor interns**, and collaborated with product management to provide technical support for various operational issues and tasks.
- Gained **hands-on experience in UI/UX design** by collaborating with the design team to create **intuitive and user-friendly interfaces**, ensuring a seamless user experience for suppliers during the onboarding process. While coordinating with cross-functional teams, including product managers, and QA engineers, in delivering a timely and successful project, resulting in positive feedback from both internal stakeholders and vendors.
- Actively participated in **daily stand-up meetings**, sprint planning, and retrospective sessions as part of an **Agile development** team, contributing to Software Development Life Cycle (SDLC) processes, fostering collaboration and continuous improvement.

## KEY ACADEMIC EXPERIENCE / PROJECTS

### Relational Database Engine (Taco-DB) | C++, GDB, Linux

- Implemented **POSIX I/O** for optimal file handling, enhancing data manipulation and significantly improving I/O performance. To streamline data access and optimize storage space, I designed an efficient **data layout** system, enabling faster query execution. Additionally, I engineered **single-table query processing algorithms** to minimize query times and resource consumption while integrating **B-tree indexing** to accelerate data retrieval and improve search efficiency across large datasets. I also developed and implemented join algorithms for efficient relational data operations, reducing execution time for multi-table queries. Furthermore, I performed manual query optimization to refine execution plans and boost overall system performance, ensuring the entire environment was containerized using **Docker** for consistency and scalability.

### Online Electronic Store using Angular

- Developed an Angular-based online store with a dynamic catalog, advanced search, and secure user management, optimized it for both desktop and **mobile view**. Implemented **NgRx state management, lazy loading, and efficient APIs for responsive performance**. Deployed robust security measures, including **JWT authentication, fraud detection, and encryption**, and successfully deployed it on Git.

### Facial Mask Detection using Machine Learning

- I Engineered a deep learning solution for **real-time face mask detection and social distancing monitoring in public spaces**, and [published in an international journal](#). Using Convolutional Neural Networks with TensorFlow and Keras, I accurately classified individuals as masked or unmasked. The system was integrated with **existing surveillance cameras using OpenCV for large-scale, real-time monitoring**, implemented an automated **alert mechanism for enhancing public safety**. Finally, I **deployed the solution on Heroku for easy access and management**.

## PUBLICATIONS & CERTIFICATIONS

- Certifications: Certified by Ministry of Skill Development in [Business app creation with Zoho](#), Certified in [AngularJS from Credo System](#).
- Received The Certificate of Excellence for being in the Top **15% academic achiever** at Sathyabama University.