Rizwan Syed

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EDUCATION

State University of New York At Buffalo   **New York, USA**
Master of Science in Computer and Information Science   **Aug 2023 – Dec 2024**
Coursework: Database Management Systems, Analysis of Algorithms, Operating Systems, Data Intensive Computing.

Sathyabama University   **Chennai, India**
Bachelor of Science in Computer Science and Engineering   **Jun 2019 - May 2023**
Coursework: Data Structures, Object Oriented Analysis, Cloud Computing, Software Development, 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, Power BI, 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 through Quantization methods, resulting in a **19.8% reduction in CO2 emissions** while maintaining model performance, with only a 6% increase in perplexity scores.
- Examined the synergistic effects of combining distillation and quantization methods, **resulting in a 45.2% reduction in emissions**, with a 57.4% rise in perplexity, demonstrating the **trade-off between energy efficiency and model accuracy.**
- 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.

Vaya Group   **Hyderabad, India**
Software Developer   **Jun 2022 - May 2023**

- 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.
- Communicate 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 PROJECTS

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

- Implemented **POSIX I/O for optimal file handling** and improved data manipulation, significantly enhancing I/O performance. **Designed an efficient data layout system** to streamline data access and optimize storage space for faster query execution.
- Engineered single-table query processing algorithms to reduce query times and resource consumption, ensuring optimal performance, **Integrated B-tree indexing to accelerate data retrieval** and improve search efficiency across large datasets.
- **Developed and implemented join algorithms for efficient relational data operations**, reducing execution time during multi-table queries. Performed manual query optimization to refine query execution plans and boost overall system performance, with the entire environment 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.

RELEVANT ACHIEVEMENTS & CERTIFICATIONS

- Published a journal titled "Face Mask Detection with Alarm using Machine Learning" in the International Research Journal.
- Certifications: Certified by Ministry of Skill Development in Business app creation with Zoho, Certified in AngularJS from Credo System.
- Represented Dell Technologies across the university, and engagement through digital marketing strategies. Received an award for outstanding contributions in promoting the brand and driving student participation through data-driven decision making & workshops.
- Received The Certificate of Excellence for being in the Top **15% academic achiever** at Sathyabama University.