RAJKUMAR R

716-808-1134 | rajkumar.rtlv@gmail.com

EDUCATION

State University Of New York at Buffalo **Jan 2023 – May 2024**
Master of Science in Engineering Science, Data Science *Buffalo, NY*

INTERNSHIP & EXPERIENCE

Aventure Infinite Possibilities **June 2024 – Present**
Software Engineer Intern *Michigan, USA*

- Focused on improving system performance and scalability by optimizing SQL query execution, reducing response time by 25% and enhancing database efficiency for faster decision-making, ultimately improving operational efficiency.
- Worked on improving microservices performance by tuning AWS resources, reducing processing time by 20%, ensuring higher scalability during traffic spikes, leading to more reliable user experiences.
- Contributed to the development of fault-tolerant systems by implementing basic load balancing techniques, reducing downtime by 25% and increasing system availability, which directly improved business continuity.
- Collaborated with engineers in an agile environment to analyze system performance, identify bottlenecks, and implement solutions, improving overall system stability by 15%, resulting in a more resilient and responsive system for end-users.

Capgemini tech. services **Dec 2020 – Jan 2023**
Software Developer *Mumbai, India*

- Maintained and deployed distributed, event-driven microservices using Kafka and RabbitMQ in AWS cloud environment, ensuring scalable, fault-tolerant system interactions to support high-performance architecture, directly improving platform reliability, and reducing service outages by 25%.
- Optimized SQL query execution plans using indexing, partitioning, and caching with Redis and Memcached, streamlining data access and boosting database efficiency by 40%, which accelerated decision-making and business intelligence processing.
- Implemented fault-tolerant messaging queues to ensure reliable asynchronous task processing across microservices, supporting transactional consistency and improving system uptime by 20% and uninterrupted service availability.
- Developed reusable OOP components using Java to standardize API interactions and eliminate redundant code, reducing complexity by 20%, enabling faster development cycles and smoother feature rollouts to meet evolving business needs.
- Applied design patterns to build maintainable and scalable software, reducing technical debt by 15% and supporting long-term system growth, ensuring that future feature expansions were efficient and aligned with business objectives.
- Collaborated with cross-functional teams, including backend developers, to optimize system reliability, scalability, and performance, improving system uptime by 20% and reducing incident response time by 25%, supporting business growth.

PROJECTS

High-Performance Job Scheduler | *Python, AWS Batch, Redis* **Sep 2024 – Nov 2024**

- Developed a scalable job scheduling system using Python, AWS Batch, and Redis to optimize CPU and memory allocation in multi-tenant environments, improving resource utilization by 25% and reducing resource contention by 20% ensuring efficient processing
- Engineered a high-throughput file storage system with Redis, reducing disk I/O latency by 35% and boosting computational performance for large-scale workloads.

Distributed Storage System | *Java, C++, AWS S3, DynamoDB* **Sep 2023 – Nov 2023**

- Developed a fault-tolerant distributed storage system using Java and C++ to efficiently handle thousands of concurrent requests with low latency, resulting in a 30% improvement in system performance.
- Implemented custom indexing, sharding strategies in DynamoDB, and designed a real-time query engine in C++ that improved data retrieval speeds by 40% and reduced query response times by 35%, while leveraging AWS S3 for scalable object storage to enhance system efficiency.

Data Text Engine | *Python, Hadoop, PySpark* **Mar 2023 – May 2023**

- Built a distributed Word Count application using Hadoop MapReduce, efficiently processing large text datasets by mapping, and reducing word frequencies, achieving a 30% reduction in processing time with optimized combiners.
- Implemented a scalable Word Count application in PySpark using RDD transformations and the DataFrame API, optimizing shuffling and data partitioning, resulting in a 25% improvement in execution time and resource consumption

TECHNICAL SKILLS

- **Programming & Databases**: Python, Java, C++, C, DBMS, SQL, MySQL, PostgreSQL, MongoDB
- **System Design & Distributed Computing**: Kafka, RabbitMQ, Redis
- **Cloud & DevOps**: AWS (S3, EC2, Lambda, DynamoDB), Docker, Jenkins, CI/CD, Git, GitHub
- **Web Development**: React.js, Node.js, Express.js, REST APIs, HTML, CSS, Django
- **Data Structure & Algorithms**: Object-Oriented Programming, Graphs, Dynamic Programming, Algorithm Design, Optimization