Vatsal Rathod

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Education

- **University of North Carolina at Charlotte** — Charlotte, NC
  Master of Science in Computer Science
- **Mumbai University** — Mumbai
  Bachelor of Engineering in Information Technology

Key Skills

Performance-driven software developer with expertise in Backend Development, Data Engineering and Machine Learning. Delivered 200+ RESTful web services and optimized SQL queries in multiple projects while maintaining excellent code quality through proper testing. Collaborated with technical stakeholders to solve complex problems. Experienced in Agile methodologies such as Scrum and Kanban.

Languages: Python, Java, C++, JavaScript, PL/SQL
Cloud Technologies: AWS, Terraform, Docker, Kubernetes, Jenkins, CI/CD
Frameworks: Django, NodeJS, Spring Framework, Core ML, PyTorch
Databases: MySQL, PostgreSQL, Redshift, Oracle DB, Elasticsearch, Snowflake, Amazon RDS, DynamoDB

Experience

- **University of North Carolina at Charlotte** — Aug 2022 – May 2023
  Graduate Assistant — *Charlotte*
  Technologies: Python, ONNX, iOS/Android, ARKit, Core ML, PyTorch, Streamlit, MLOps
  - Contributed to the development of two projects that involved integrating AI and computer vision models with the WebRTC framework.
  - Developed ONNX inferences for over 20 PyTorch models focused on computer vision tasks such as human detection, 2D and 3D pose estimation, and integrated them with Streamlit for easy visualization.
  - Integrated ONNX inferences into an iOS app using Core ML and incorporated real-world human movement into the app's avatar movements using ARKit.
- **HealthEquity** — May 2022 – August 2022
  Software Engineer Intern — *Charlotte*
  Technologies: AWS lambda, AWS SNS, AWS SQS, Django, Python, Snowflake, DynamoDB, JIRA
  - Operated on the Further platform, which enables users to manage their HSA funds, to develop new features and enhance system performance.
  - Created a POC for shifting features from traditional database pattern to event sourcing + CQRS pattern, resulting in a 20% reduction in storage requirements and freeing up processing power for the databases.
  - Built AWS lambda functions using and integrated it with AWS API gateway and implemented dynamoDB triggers to integrate the data with other databases and storage i.e. AWS dynamodDB, AWS RDS and AWS S3.
- **Reliance Jio** — August 2019 – July 2021
  Software Engineer — *Mumbai*
  Technologies: Java, Spring Framework, Spring Boot, Oracle DB, Hibernate, J2EE, Maven, Elasticsearch
  - Worked on Microservice architecture based projects NextGenOps and AIOps for automating the operations of Jio.
  - Collaborated with development and testing teams to streamline the approval process using Piper and RabbitMQ, resulting in 50% reduction in approval time.
  - Created RESTful web services with three-layer authentication using Zuul API gateway, Consul, and Apache Zookeeper to create intranet APIs for dashboards, notifications, and access management, utilizing different microservice architectures such as custom API gateway and Core-BFF model.
  - Efficiently performed ETL operations to transfer data from SQL Server to Oracle using Talend for the AIOps project. Developed optimized Stored Procedures to format the data, enabling the creation of insightful dashboard.
  - Conducted rigorous application testing using JUnit for unit tests and JMeter for load tests. Integrated these tests into Jenkins-driven CI/CD pipelines for automated and efficient microservice deployment.
  - Deployed services on AWS EC2 with Docker, employing multi-stage builds to accelerate workflows and utilized Kubernetes for streamlined service management.
  - Achieved a 75% reduction in application latency by optimizing API response times to 500 milliseconds using Redis for user-specific data caching, optimizing SQL query execution plans, data formatting using PL/SQL blocks, indexing of required columns and partitioning of the table.
- **Pragadas Technologies** — January 2018 - July 2019
  Software Engineer — *Mumbai*
  Technologies: Python, Java, EMR, Kafka, MySQL, NoSQL, NLP
  - Coordinated with multiple teams to perform system study and requirements analysis, worked on creation of database objects(tables, views, etc), designed optimized queries and REST API's.
  - Designed and deployed scalable data processing systems using Amazon Kinesis and AWS Lambda, integrated with Amazon EMR for advanced analytics, resulting in a 35% improvement in data throughput
  - Utilizing AWS Glue, constructed a robust data processing pipeline that read data from Kafka, subsequently cleaning and parsing this information using the AWS Lambda function, before storing it in MySQL DB.