

Harsh Jitendrakumar Rao

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EDUCATION

Santa Clara University

Masters of Science, Computer Science

Santa Clara, CA

September 2024 – June 2026

Indian Institute of Information Technology

Bachelors of Technology, Computer Science

India

September 2020 – July 2024

EXPERIENCE

Creotosaurus

Software Engineer Intern

January 2024 – July 2024

India

- Contributed in development of an image generation and visual detection on augmented reality app.
- Analyzed data on entity count, shade detection, activity patterns and enhanced image segmentation algorithms (YOLOv8) to improve accuracy by 15%.
- Migrated 1 of 3 Alteryx workflows to a Lambda function using Python (Boto3, Connectorx, Pandas), S3, and Redshift to enable independence from Alteryx, resulting in annual savings of \$8,000 per license
- Developed AWS Lambda functions for MFT-to-S3 data transfer and real-time Redshift partition updates, used Terraform to create S3 event notifications and DynamoDB items for workflow triggers and data partitioning, and integrated tables into Redshift with PostgreSQL

Indian Institute of Information Technology

Student Researcher

July 2023 – January 2024

India

- Developed a molecular diffusion model for graph models research, enhancing trajectory prediction 25%.
- Leveraged NVIDIA HGX supercomputer GPU cluster, reducing computational time by 35% while gaining expertise in high-performance computing and large-scale machine learning deployment.
- Implemented parallel Graph Attention Networks to mimic mixture of experts modelling seen in foundation LLMs, Increasing model accuracy and efficiency in predicting molecular interactions

JIO

Software Developer Intern

April 2023 – July 2023

India

- Implemented Apache Kafka as an indexer in Jenkins Logstash plugin with java, routing over 10,000 daily Jenkins build logs directly to Elasticsearch Kibana, enhancing CI/CD reliability and monitoring.
- Adapted the core rebalanced Python script, which allocates OpenStack Nova compute to Jenkins build nodes by adjusting Openstack quota, to run as a daemon, boosting responsiveness by 50%.
- Developed a full-stack Flask application on top of rebalancer to monitor 5000 Jenkins build notes, manage OpenStack quota requests, track project-specific rebalancer errors and integrated with a grafana dashboard for critical infrastructure monitoring.
- Productionalized the rebalancer application with robust error handling and deployment using Docker into a Kubernetes cluster.

PROJECTS

Loan Broker | .NET, AWS, Docker, Grafana, Prometheus

- Architected a distributed microservices system using AWS, .NET 8, Docker, and Enterprise Integration Patterns to enable seamless communication between loan brokers, credit bureaus, and banking services.
- Implemented OpenTelemetry pipelines to export metrics and traces to AWS CloudWatch, X-Ray, Prometheus, and Jaeger, enhancing observability and performance monitoring.
- Developed fault-tolerant messaging workflows with automated retries and diagnostics using ServicePulse, improving system resilience and operational efficiency.
- Deployed containerized infrastructure with Docker Compose, integrating LocalStack to mock AWS services for robust testing and scalable deployments. Configured monitoring dashboards in Grafana and Prometheus to track key metrics, including message processing time, critical failures, and service performance.

Fitness App | TensorFlow, Polygon, Flutter and Postman

- Built a fitness app that leverages machine learning to suggest personalized workouts based on user data.
- Implemented Health Connect to get fitness data from users' data about active burned calories from Apple Health in IOS or Google Fit in Android.
- Implemented NFT rewards to incentivise the user to use the app for their fitness goals.
- Created leader board, social sharing and messaging functionalities to share data and compete.

TECHNICAL SKILLS

Skills: Full Stack, Android, IOS, Machine Learning, Data Science, Game Development, Data Base

Languages: Java, Python, C/C++, SQL, JavaScript, C#, Dart, GO

Frameworks: .NET, React, Node.js, Flask, Flutter, Unity, Unreal, FastAPI

Developer Tools: Git, Docker, Amazon Web Services, Google Cloud Platform, FireBase, Kafka, Prometheus, Grafana