

Rohith Puvvala Subramanyam

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TECHNICAL SKILLS

- **Programming Languages:** Python, C++, SQL, CUDA, Java, Scala, R, Swift
- **Frameworks & Libraries:** TensorFlow, PyTorch, ROS2, Flask, FastAPI, Sci-kit Learn, NumPy, Pandas
- **Cloud & DevOps:** Amazon Web Services(EC2, IoT core, SageMaker, Lambda, EKS, CloudFormation, S3, Glue, SQS), Google Cloud Platform(GCP), Azure, Kubernetes, Docker, Kubeflow
- **Database:** Snowflake, MySQL, PostgreSQL, PySpark, DynamoDB, MongoDB, Redis, GraphQL, Databricks, Cassandra, Redis, Neo4j
- **Data Visualization tools:** Tableau, Power BI, Matplotlib, Seaborn, Plotly
- **Big Data Technologies:** Apache Spark, Hadoop, Hive, Kafka
- **CI/CD, MLOps & Monitoring:** Git, Jenkins, GitHub Actions, MLflow, Apache Airflow, Travis CI, Prometheus, Grafana, CloudWatch, JIRA
- **Front End Development:** HTML, CSS, JavaScript, ReactJS
- **Operating Systems:** Linux, Unix
- **Core Competencies:** Data Structures & Algorithms, Machine Learning, System Design, Distributed Computing, Cloud Computing, Distributed Systems, API Design, Performance Tuning, Software Development Life Cycle(SDLC)

PROFESSIONAL WORK EXPERIENCE

Data Scientist, NetSec Professionals, Fremont

August 2023 – Present

- Developed and deployed **deep learning** models for object detection, image segmentation, and classification using **TensorFlow** and **PyTorch** on **AWS**, achieving 95% accuracy in identifying and handling delivery boxes by robots.
- Applied **transfer learning** and fine-tuning with **EfficientNet** and **YOLOv5**, reducing training time by **40%** and increasing accuracy by **20%** on **SageMaker**.
- Integrated real-time tracking with OpenCV and Deep SORT, achieving 98% tracking success, and enhanced 3D mapping with SLAM and LiDAR using **AWS IoT Core** for real-time communication, increasing navigation accuracy by 25%.
- Collaborated with cross-functional teams to design **simulation workflows** using **ROS2** and **Gazebo**, reducing development time by **20%**.
- Conducted **A/B testing** to refine models and data strategies, boosting performance by 20%.

Data Engineer Intern - Sapmount Technologies, San Francisco

January 2023 – May 2023

- Participated in designing and implementing the **A/B testing** dashboard for ad campaigns on GCP, focusing on the Data Collection, Feedback, and Iteration modules.
- Developed the back end with **Spark**, **Hive**, and **Kafka** for real-time data ingestion and processing of user interaction data, utilizing Apache Parquet for efficient, compressed storage and fast querying of large datasets.
- Built the Result Reporting module to visualize ad performance metrics, enabling quick campaign adjustments.
- Implemented **XGBoost** for its efficiency in handling large, sparse datasets and TensorFlow for deep learning tasks to enhance ad relevance and ranking, resulting in a 20% improvement in engagement, deploying models with CI/CD pipelines on GCP.

Graduate Research Assistant, San Jose State University, San Jose

September 2021 – January 2023

- Developed an **object detection system** with **YOLOv5** for real-time collision detection, enhancing urban mobility safety.
- Integrated **Lucas-Kanade optical flow** to accurately calculate vehicle speeds and distances for collision detection and warnings.
- Achieved **80% accuracy** in accident prediction, demonstrating the system's effectiveness in mitigating risks.

Assistant System Engineer, Tata Consultancy Services, India

February 2020 – September 2021

- Developed and maintained a highly scalable end-to-end recommendation engine for an e-commerce platform, personalizing product suggestions based on real-time user interactions.
- Integrated **Machine Learning models** for **dynamic pricing** and recommendations using **SageMaker**, collaborating with product and data science teams, and implemented **microservices** architecture on **AWS ECS** and **Lambda** for APIs.
- Engineered data pipelines, optimizing backend logic for checkout workflows and cart management, reducing cart abandonment by 15% with **A/B testing** on algorithms and pricing strategies.
- Designed **RESTful APIs** to interface with the front-end team, ensuring seamless delivery of personalized product feeds.
- Automated **CI/CD pipelines** using **AWS CodePipeline** and **CodeDeploy**, with **CloudWatch** ensuring **99.9% uptime**.

Programmer Analyst Trainee, Cognizant Technology Solutions, India

June 2019 – February 2020

- Developed a real-time data retrieval system, improving service time by 40% with seamless communication via **GraphQL APIs**, **SQL**, and **Snowflake**.
- Deployed services on **Lambda** and workloads on **ECS Fargate**, ensuring zero downtime and efficient scaling, with **EKS** orchestrating microservices architecture for high availability.
- Integrated **Amazon SQS** for reliable communication and to prevent message loss during peak loads.
- Monitored and optimized system performance using **CloudWatch**, **Prometheus**, and **Grafana**.
- Ensured data security and compliance with **AWS IAM** and encryption for secure data handling.

Publications and Awards

- **"Accident Prediction on E-bikes using Computer Vision"** – Presented at IEEE Big Data Services (BDS) 2023 Conference, Athens, Greece.
- **Davidson Student Scholarship Award** – Recognized for outstanding academic contributions and research in AI and Computer Vision at San Jose State University.

PROJECTS

3D Video Construction and Image Mapping (2022) - San Jose State University

- Led a project employing Structure from Motion (SfM), CNNs, and RNNs to create realistic and dynamic 3D visual content.

Super-Resolution and Image Deblurring with Deep Networks (2021)- San Jose State University

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- Developed deep learning models including SRGAN(Super-Resolution Generative Adversarial Network) and deep convolution networks for image resolution enhancement and deblurring.

EDUCATION

San Jose State University: San Jose, California. Master of Science in Artificial Intelligence	August 2021 - May 2023
Sree Vidyanikethan Engineering College, Tirupati, India. Bachelor of Technology in Mechanical Engineering	July 2015 - April 2019