IRFAN AHAMED MELEKKANDY PUTHALATH

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EDUCATION

Rutgers University *Sep 2024 – Dec 2025 (Expected)*
Master of Information Technology (Machine Learning)
Relevant Coursework: Advanced Database Management (AWS, Snowflake), Data Structures & Algorithms, Machine Learning, Python for Analytics

RV College of Engineering *Aug 2017 – Aug 2021*
Bachelor of Engineering in Electronics and Instrumentation

EXPERIENCE

CGI Inc. Bengaluru, India
Software Engineer Sep 2022 – Jul 2024

– **NLP Document Processing System:**
  – Designed and deployed a hybrid CNN-BERT model in PyTorch 2.0 to automatically classify legal documents into 12 regulatory categories, achieving 94% F1-score on a dataset of 50,000 documents.
  – Optimized document processing pipelines by implementing dynamic batching on AWS Inferentia, reducing inference latency by 73% and enabling real-time processing of 15,000+ documents per day.
  – Established a robust CI/CD pipeline with GitHub Actions and SageMaker Model Monitor, reducing deployment errors by 41% and ensuring reliable, continuous model updates.

– **Microservices Optimization:**
  – Developed a high-throughput fee calculation microservice using Vert.x (Java), achieving 28,000 requests per second via lock-free algorithms and efficient resource management.
  – Led the migration of a legacy Java EE application into a Kubernetes-based microservices architecture (~237 pods), cutting annual cloud infrastructure costs by $1.8M and improving system scalability and resilience.

Vishwas Coffee Coorg, India
Software Engineer (Backend Systems) Sep 2021 – Aug 2022

– Engineered a full-stack internal platform (Angular frontend, Python/Flask backend, MySQL database) to digitize inventory management and order tracking for a coffee and spice wholesaler, eliminating manual processes and improving stock accuracy by 25%.
– Introduced a real-time order tracking module for wholesale clients, reducing order processing time by 30% and improving on-time delivery rates, which led to a 15% increase in repeat customer orders.
– Integrated inventory, sales, and supply chain data into a unified dashboard for management, enabling data-driven restocking decisions and reducing excess inventory by 20%.

SELECTED PROJECTS

GridCast: Interpretable Deep Learning for Energy Demand Forecasting *Mar 2025*
– Constructed an interpretable deep learning model to forecast power grid energy demand, reducing prediction error by 15% compared to baseline time-series models
– Defined explainability techniques (SHAP values) to highlight key factors influencing demand fluctuations, enhancing transparency and trust for grid operators
– Deployed the trained model as a lightweight web service for real-time demand predictions, enabling integration into energy management systems with sub-second response times

Production-Grade Depth Regression Model *Oct 2022*
– Implemented a monocular depth estimation model achieving 98% precision; optimized it for 28 FPS real-time inference on edge devices and boosted accuracy by 45% via an ensemble of global/local depth networks

Apna-Pharmacy Microservices Platform *Aug 2022*
– Built a microservices-based online pharmacy platform ("Apna-Pharmacy") with containerized services for prescriptions, inventory, and orders, enabling seamless scaling and fault isolation in a cloud environment.

SKILLS & CERTIFICATIONS

Programming & Scripting: Python, Java, C++, SQL, JavaScript, Bash, Linux

Frameworks & Libraries: Vert.x, FastAPI, Flask, React, Angular, PyTorch, TensorFlow, Pandas, NumPy

Cloud & DevOps: AWS (EC2, S3, DynamoDB, SageMaker, CloudFormation), Azure; Docker, Kubernetes, CI/CD (GitHub Actions); Microservices, REST APIs

Databases & Caching: MySQL, Redis

Machine Learning: ML Algorithms (Supervised, Unsupervised, Reinforcement), Deep Learning (CNNs, RNNs, Transformers), MLOps (Kubeflow, MLflow), Model Serving (TF Serving, ONNX Runtime, TorchServe)

Certification: AWS Certified Developer – Associate