

# Karthik Arun

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## EXPERIENCE

### Data Science Intern

Mar 2024 – Aug 2024

*Singapore Airlines*

*Singapore*

- Developed and deployed a GPU-optimized chatbot using AWS Bedrock and custom LLMs on local servers, reducing time-to-fix of shallow aircraft defects by 30%
- Implemented RAG architecture with hybrid search optimization, resulting in 40% improvement in fetched documents accuracy
- Optimized document processing pipeline by replacing AWS Textract with Claude-3 Haiku for OCR functions, reducing monthly costs from \$12 to \$0.05 per 1000 documents while maintaining 95% accuracy

### Salesforce Analyst

Jul 2021 – Jul 2023

*Deloitte Consulting*

*Chennai, TN, India*

- Built a CI/CD system from the ground up for Salesforce deployments, using BitBucket Pipelines, SFDX, Jenkins and Docker, improving deployment times by 97%
- Developed and deployed large-scale predictive models using AWS SageMaker for customer churn prediction, identifying 85% of at-risk customers 2 months in advance
- Worked on recommendation systems for vehicle service packages using Einstein AI, increasing cross-sell revenue by \$2.5M annually
- Engineered scalable model serving pipelines using AWS Glue, processing 2TB+ of customer data with 40% reduced latency

## TECHNICAL SKILLS

**Languages and Frameworks:** Python, SQL, Shell, Git, YAML, R

**Generative AI:** VertexAI, Bedrock, LangChain, HuggingFace

**Engineering and MLOps:** Docker, Kubernetes, FastAPI, Jenkins, MLflow, Airflow

**Cloud and Deployment:** AWS ML Suite, Azure Cloud, GCP

**Databases:** MySQL, PostgreSQL, MongoDB, Neo4j, BigQuery

**Visualization:** Tableau, Matplotlib, Seaborn, Plotly

## CERTIFICATIONS

### AWS Certified Machine Learning Associate

Oct 2024

*Amazon Web Services*

### Salesforce Certified AI Associate

Oct 2024

*Salesforce*

## EDUCATION

### National University of Singapore

Singapore

*Master of Technology in Enterprise Business Analytics*

*Aug 2023 – Oct 2024*

- Cumulative GPA: 4.75/5.0; IBM Medal for Best Outgoing Student

### SASTRA University

Thanjavur, TN, India

*Bachelor of Technology - Information and Communication Technology*

*Jul 2017 – Jul 2021*

## PROJECTS

### TurboPredict | Singapore Airlines R&D | PyTorch, Docker, Airflow, FastAPI

May 2024

- Built an end-to-end ML pipeline for real-time turbofan engine health monitoring, implementing automated model retraining and deployment pipelines

### QuizMasterAI | NUS-ISS | LangChain, Transformers, Qdrant

Mar 2024

- Fine-tuned an open-source LLM for question generation and evaluation in a school setting, using PEFT techniques and implementing efficient serving architecture and engineered prompts

### GraphRecommend | NUS Co-op Store | PyTorch Geometric, Neo4j, FastAPI

Feb 2024

- Developed a production-ready recommender system using Graph Neural Networks, serving 500k+ users with sub 50ms latency