

# ARUN PRASATH L

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## SUMMARY

Python Developer with 1 year of experience in backend development, AI/ML, and Generative AI. Skilled in ML pipelines, FastAPI/Django, microservices, and cloud deployments (Docker, AWS, CI/CD). Experienced in MLOps, RAG, LLM integration, and forecasting systems, with a passion for solving real-world problems through data-driven solutions.

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## EDUCATION

- Master's Degree in Data Science at St. Joseph's college Trichy (Autonomous) **Grade: 72%.** 06/2022 - 04/2024
  - Bachelor Degree in Physics at Loyola college Chennai (Autonomous) **Grade: 65%** 06/2019 - 05/2022
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## EXPERIENCE

**Python Developer - AI/ML - Dynamic systems and advanced technologies.(present)**

### Projects.

#### DMS Gateway – Dock Management System (SaaS, Microservices) – In Development

- Description: Currently building the gateway app layer for a SaaS-based Dock Management System using a microservices architecture. Responsible for designing backend services and developing core APIs using FastAPI. Implementing multi-tenant structure, role-based access control, tenant-aware request validation, and clean service boundaries.
- Current Responsibilities:
- Developing microservices and foundational API endpoints. Designing database schemas, and service logic.
- Implementing tenant isolation and permission checks in the gateway.
- Tech Stack: Python, FastAPI, SQLAlchemy, PostgreSQL, Microservices Architecture, SaaS Platform Design, Redis.

#### AI-Powered Document Intelligence & Automated Order Data Extraction for TMS.

- Developed an AI-powered Document Intelligence system to extract and map unstructured order documents (150+ page PDF) into standardized TMS payloads.
- Implemented OCR, Docling for custom Word2Vec embeddings, spaCy NER models for accurate data extraction.
- Built a synonym-mapping engine to automatically interpret client-specific field variations.
- Integrated a chatbot-based human-in-loop validation workflow for low-confidence fields.
- Achieved 80% automation in order data processing and reduced manual effort significantly.
- Tech stack: python, FastAPI, OCR, NLP, Embedding model, Docling, Redis, micro service, mangoDB, Docker, EC2.

#### FleetX – Spare Parts Demand Forecasting System.

- Description: Designed and deployed an end-to-end ML system for forecasting spare parts demand using SARIMAX and Prophet. served models via Fast API microservices with Celery + Redis. containerized with Docker & Docker Compose, deployed on AWS EC2, and implemented CI/CD pipelines using GitHub Actions.
- Impact: Improved forecasting accuracy by 20% using SARIMAX/Prophet is stronger than designed and deployed.
- Tech Stack: Python, Fast API, SARIMAX, Prophet, Celery, Redis, Docker, AWS EC2, Mlops, Data engineering.

#### Alkanz – Digital Gold Mobile Application (Backend)

- Description: Developed backend APIs for a digital gold selling app using Django REST Framework, integrated Gold API for real-time rate updates, and implemented Redis caching and Celery for efficient background processing; deployed as a Docker image on VM.
- Impact: Enabled secure, real-time gold transactions and ensured scalable, high-performance backend operations.
- Tech stack: Python, Django rest framework, Rest API, Redis, celery, Docker, EC2, S3 bucket, CI/ CD, Postman.

**Ai Developer intern – Infosys springboard Project Intern.**

11/2024 - 01/2025

#### AI-Driven Supply Chain Disruption Predictor and Inventory Optimization System.

- Description: Built an AI system to monitor global wheat supply chain data, predict disruptions, and optimize inventory levels; implemented REST API pipelines, Fast API microservices, and LLM-based risk evaluation (LLaMA3, BERT); integrated Discord API for real-time alerts.
- Built REST API pipelines to collect real-time data and applied NLP & LLMs (LLaMA3, via Hugging Face) for sentiment analysis and risk evaluation.
- Developed an inventory optimization framework based on risk scores to proactively mitigate disruptions.
- Tech stack: Python, Rest API, NLP, LLM, Hugging face, Data collection, Llama 3, Bert, Fast API.

## PERSONAL PROJECT'S

### **RAG-based Document Q&A System.**

- Description: Developed a Retrieval-Augmented Generation (RAG) system allowing users to upload documents and ask natural language questions.
- Implemented document ingestion pipeline with text extraction, chunking, and vector embeddings for semantic search.
- Integrated LLM (Llama 4, via Grog Cloud API) with a retrieval layer to provide accurate, context-aware answers.
- Built a Fast API backend to handle document uploads, query processing, and model inference.
- Impact: Enabled users to retrieve accurate answers from unstructured documents, improving search efficiency and user experience.
- Tech Stack: Python, Fast API, Lang Chain, Hugging Face, DeepSeek 270B (Grog Cloud API) NLP, Embeddings.

### **E-Commerce Website Backend (with Payment Gateway Integration).**

- Built and deployed a scalable e-commerce backend using Django REST Framework (DRF) to manage products, users, carts, and orders.
- Integrated Cashfree Payments Gateway for secure online transactions with webhook-based real-time order status updates.
- Containerized the application with Docker and deployed on AWS EC2, ensuring availability and scalability.
- Implemented CI/CD pipelines with GitHub Actions for automated build, test, and deployment workflows.
- Tech Stack: Django REST Framework, PostgreSQL, Cashfree Payments API, Docker, AWS EC2, GitHub Actions, CI/CD, Redis.

### **Hospitality Management Analytics - Hospitality domain.**

- Designed and deployed Power BI dashboards for the hospitality domain, monitoring key metrics such as occupancy rates, guest satisfaction, revenue trends, and resource utilization, enabling a 25% improvement in operational decision-making efficiency.
- Tech stacks: Power BI, Power Query, EDA, DAX, Data Analysis, Data Cleaning, Data Visualization, SQL, MS Excel.

## TECHNICAL SKILLS

**Programming & Data Base:** Python, SQL, NoSQL, MySQL Server, Postgres SQL, MongoDB, Vector DB (FAISS, Weaviate)  
**Cloud & Deployments :** AWS EC2, Azure VMs, Docker compose, CI/CD(GitHub Action).

**Tools and framework:** Django rest framework, Fast API, Rest API, Microservices, Linux, Git, Docker, supbase.

**AI/ML/GENAI:** Regression, classification, Timeseries forecasting, feature engineering, MLOPS, Deep Learning(NLP, Transformer), Vector DB(FAISS, Weaviate), RAG systems, Embedding model, Lang Chain, Prompt engineering.

**Analytics & data visualization:** Power BI, Matplotlib, MS Excel, Data Analysis (EDA), ETL, Data Preprocessing, Data warehouse, Data Lakehouse.

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## ACHIEVEMENT'S

- Spearheaded Data Visualization Event (Datos): **Organized** and led a successful **data visualization event** overseeing all aspects of planning and execution.
- Earned 1st place in the data visualization event hosted by Bishop Heber College in **Power BI**.
- Secured 2nd place at Loyola college data visualization event **Power Bi**.

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## CERTIFICATIONS

- Google Data Analytics – Coursera.
- Python Certification Hacker Rank.
- Machine learning – Perfect E learning
- GenAI mastermind workshop. – Out skills