

IVAN J MADATHIL

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GitHub | LinkedIn

EDUCATION

Vellore Institute of Technology

Computer Science with specialization in AI and Robotics B. Tech
CGPA: 8.19

Chennai, India
August 2023 - July 2027

Indian Institute of Technology Madras

Data Science and Applications B. Sc

Chennai, India
July 2023 - Present

EXPERIENCE

Bajaj Finance Limited | Data Engineering Intern

Pune, India | May 2025 - June 205

- Helped and guided in the smooth migration of over 30 repositories of the enterprise data team from Azure DevOps to GitHub including PRs and pipelines
- Create a CI/CD pipelines for applications for deployment to Azure Kubernetes Services(AKS) using Azure Container Registry(ACR) as a container registry and using RBAC's for access controls
- Learned data engineering workflows by implementing mini projects using Azure EventHubs and Azure CosmosDb

Vita-Data | Backend Developer Intern

Remote | May 2025 - August 2025

- Worked on developing the backend of the application, using technologies like Django, PostgreSQL and implementing session based authentication using JWT

Vellore Institute of Technology, Chennai | Summer Research Intern

Remote | May 2025 - Present

- Worked on the CADP (CCTV Accident Detection) dataset, for improving the accuracy and efficiency of a model using technologies like Yolov8 and DeepSORT.
- Managed to create a accident detection pipeline with a higher accuracy as compared to pre existing papers

MedTourEasy | Data Analyst Trainee

Bengaluru, India | June 2024 - July 2024

- Cleaned, analyzed, and visualized large datasets of over 10,000 instances using Python libraries such as Pandas, NumPy, and Matplotlib to derive meaningful insights from raw data.
- Designed intuitive and visually appealing data visualizations using Matplotlib and Seaborn, simplifying complex data trends for stakeholders to support strategic decision-making

FIXO | Backend Developer Intern

July 2025 - July 2025

- Worked on setting the code base for backend workflow.
- Setup OAuth 2.0 using MERN Stack

SKILLS

Programming Languages:	Python, Java, Go, SQL, Javascript
Libraries/Frameworks:	Flask, Numpy, Pandas, Matplotlib, Django, FastAPI, Pytorch, React
Tools / Platforms:	Git, Docker, GitHub, Azure DevOps, Kubernetes, Azure Kubernetes Service, Azure Container Registry, Azure EventHubs
Databases:	PostgreSQL, Sqlite, MySQL, CosmosDB

PROJECTS / OPEN-SOURCE

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FastAPI, Qdrant, OCR, Playwright

- Designed and deployed an intelligent document processing system that dynamically routes between static document analysis and interactive web automation using a hybrid rule-based and LLM-driven selection mechanism.
- Implemented a sophisticated multi-modal document processor supporting PDF, DOCX, PPTX, EML, and webpages with advanced text extraction, OCR capabilities, and semantic search using SentenceTransformers and Qdrant vector database.
- Built an intelligent web automation engine using Playwright that can complete complex multi-step challenges, fill forms, extract secret codes, and navigate dynamic web applications with 95%+ success rate on interactive tasks.

- Developed a comprehensive caching system with intelligent Q&A caching, document embedding storage, and dynamic content detection that reduces processing time by 80% for repeated queries while maintaining accuracy.
- Integrated advanced LLM agents with function calling capabilities for complex document analysis, HTTP operations, and HTML parsing, enabling the system to handle both static document Q&A and dynamic web interactions seamlessly.
- Engineered a robust FastAPI backend with secure authentication, comprehensive error handling, and detailed logging that processes thousands of document queries with sub-second response times for cached results.

weather-api-wrapper | Link

C#, Docker, ACR, AKS, CI/CD, Kubernetes, Azure

- A .NET webapi that wraps the weather api.
- It has been containerized and a pipeline to Azure Container Registry has been maintained
- Local Deployment using kubectl to Azure Kubernetes Services have been implemented.
- Deployment pipelines created implemented using RBAC from Azure Container Registry to Azure Kubernetes Service.

router | Link

Python, FastAPI, HuggingFace Transformers, scikit-learn, OpenRouter API, AsyncIO

- Designed and deployed a scalable backend that dynamically routes user prompts to the most suitable LLM (among five llms) using a hybrid rule-based and classifier-driven selection mechanism.
- Fine-tuned a DistilBERT model on a custom-labeled prompt dataset (9500+ examples) to predict the optimal LLM for a given input, achieving nearly 93% test accuracy across five target models.
- Integrated the trained model into the routing pipeline to enable real-time LLM selection, significantly improving response quality and contextual alignment.
- Implemented detailed evaluation metrics and maintained reproducible model training using HuggingFace Trainer API and stratified train/val/test splits

gmail-tui | Link

Go

- One of my most ambitious projects
- Managed to create a TUI for gmail with basic functionality using Go
- Major day to day features work and is still being developed daily.

PlottyCSV | Link

Flask, HTML, CSS, JavaScript

- A Flask-based web app that allows users to upload CSV files, select columns for X and Y axes, and generate interactive plots using Plotly. Features include customizable plot types and colors for enhanced data visualization.
- Technologies used include : Flask for the web framework, Pandas for data processing, Plotly for interactive visualizations, and HTML/CSS with JavaScript for the front-end.

CERTIFICATIONS

- Foundations In Data Science - **Indian Institute of Technology**
- Machine Learning Specialization (DeepLearning.AI) - **Coursera**
- GirlScript Summer Of Code | Contributor - GirlScript Summer Of Code.

HONORS & AWARDS

- Covasant AI Hackathon Runner Up
- Bajaj Finserv Health HackRx 6.0 Finalist