

# Mohammed Aaqil Rayyan

Computer Science Graduate – Artificial Intelligence & Machine Learning

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[Portfolio](#)

## EDUCATION

### Bachelor of Computer Applications (BCA)

Yenepoya University, Mangalore

2022–2025 | CGPA: 8.73

Specialisation in Robotics, ML & AI

## SKILLS

- Languages: Python, C++, JavaScript, SQL
- AI/ML: Neural Networks, RAG, Computer Vision, NLP, Deep Learning
- Tools: TensorFlow, Keras, OpenCV, FAISS, Pandas, NumPy, Git
- Data: MySQL, Data Analysis, EDA
- Core: Linear Algebra, Statistics, Research, Documentation

## CERTIFICATIONS

- Machine Learning with Python — IBM
- Introduction to Deep Learning and Neural Networks — IBM
- Mathematics for Machine Learning: Linear Algebra — Imperial College London
- An Intuitive Introduction to Probability — University of Zurich
- Fundamentals of Reinforcement Learning — University of Alberta
- Introduction to Artificial Intelligence — IBM
- Python for Everybody Specialisation (Selected Courses) — University of Michigan
- Exploratory Data Analysis for Machine Learning — IBM

## WORKSHOPS

- Robotics & Embedded Systems (Arduino Uno, NodeMCU) – Yenepoya University
- Power BI Visual Analytics – Industry Workshop
- Microsoft Azure AI & Cloud Fundamentals Training

## LANGUAGE

English, Hindi, Malayalam, Tamil

## EXPERIENCE

### Data Analyst Intern

Quest Innovative Solutions Pvt. Ltd., Mangalore

March 2025 – May 2025

- Cleaned and prepared datasets using Pandas, improving data consistency and reducing missing values by 95%.
- Conducted exploratory data analysis using NumPy and Matplotlib to uncover actionable insights for internal projects.
- Designed and presented visual dashboards, enabling stakeholders to make decisions 20–30% faster based on data-driven insights.
- Developed reproducible analysis workflows in Jupyter Notebook with clear documentation for long-term usability.

## PROJECTS

### AraGovAssist – Cross-Lingual RAG for Arabic Government Services

Python, Sentence-Transformers, FAISS, Gemini API, Streamlit

- Engineered production-grade RAG system with 99% AR–EN retrieval accuracy.
- Reached 90% accuracy on dialectal Arabic and 84% robustness on noisy real queries.
- Published peer-reviewed paper ( $p < 0.0001$ ) and deployed a live demo used by real users.
- Removed translation overhead via multilingual embeddings without performance loss.

| [Live Demo](#) |

### The Career Copilot – AI Career Guidance Platform

Next.js, TypeScript, REST APIs

- Built AI-powered tool delivering personalized career roadmaps and job suggestions.
- Implemented resume parsing and dynamic content rendering for smoother UX.
- Generated recommendations aligned with skills, interests, and market demand.

| [Live Demo](#) |

### StudyMate – RAG-Powered AI Learning Assistant

Python, FastAPI, FAISS, Sentence Transformers, Speech Recognition

- Developed RAG-based Q&A system for uploaded study materials.
- Designed clean UI with voice input/output for accessibility.
- Improved retrieval accuracy using semantic vector embeddings.

### Real-Time AI Object Detection

YOLOv8, OpenCV, Python

- Built real-time multi-camera object detection with optimized processing pipelines.
- Achieved stable inference speeds on standard hardware.
- Added configurable alerts and performance logging.

| [Live Demo](#) |

## RESEARCH

Focused on cross-lingual retrieval-augmented generation (RAG) for Arabic–English government services, with emphasis on accuracy, dialect handling, and statistical rigor.

- Achieved 99% category accuracy, 90% dialect accuracy, and 84% robustness on noisy real-world inputs.
- Validated results with  $p < 0.0001$ , confirming strong statistical significance.
- Demonstrated that multilingual embeddings remove translation overhead without sacrificing performance.

| [Paper](#) | [Live Demo](#) | [Github](#) |