

# VISHNU K

AI Engineer | Cloud Full-Stack Developer | MCA – Advanced Cloud Technologies  
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## PROFESSIONAL SUMMARY

Aspiring AI Engineer and MCA student (Advanced Cloud Technologies) with a solid foundation in Python, Django, and RESTful API development. Experienced in building microservices architectures, designing secure authentication systems (JWT, OAuth, RBAC), and containerising applications with Docker and CI/CD pipelines. Hands-on experience in **prompt engineering — including structured prompting, chaining techniques, and AI response optimisation** — alongside NLP-based systems, LLM/GenAI API integration, content-based recommendation engines, and foundational RAG concepts. Proven track record delivering full-stack, real-world systems including a hackathon-winning product and live deployed websites. Published co-author on AI-era employability. Seeking a production AI engineering environment to apply backend and AI fundamentals.

## CORE AI SKILLS

### Prompt Engineering

Structured prompts · Chaining concepts · AI response optimisation

### NLP Systems

TF-IDF · Text processing · Classification pipelines

### Recommendation Systems

Content-based filtering · Cosine similarity · Scikit-learn

### RAG (Foundational)

Chunking · Retrieval concepts · Embedding basics

### LLM Concepts & API

LLM API integration · GenAI applications · PyTorch (Basic)

## TECHNICAL SKILLS

**AI / ML / GenAI:** Prompt Engineering · LLM Concepts & API Integration · GenAI Applications · NLP · TF-IDF · Scikit-learn · NumPy · Pandas · PyTorch (Basic)

**Languages:** Python · Java · JavaScript · C++ · SQL

**Backend:** Django · Flask · Node.js · RESTful APIs · Microservices Architecture

**Auth & Security:** JWT · OAuth · RBAC · TLS · AES-256 Encryption · Keycloak

**Databases:** MySQL · SQLite · MongoDB (Basic) · Redis

**Cloud & DevOps:** AWS · GCP · Docker · Kubernetes · GitHub Actions · Jenkins · CI/CD · Serverless

**Frontend:** React · Flutter · HTML · CSS · Tailwind CSS · Bootstrap

**Tools & Messaging:** Git · GitHub · Postman · Linux · RabbitMQ · WordPress · PHP · Streamlit · FastAPI

## INTERNSHIP EXPERIENCE

### Python Django Intern

Jan 2025 – Apr 2025

Luminar Technolab · Kochi, Kerala

- Completed a structured internship program focused on Python and Django backend development, gaining practical exposure to real-world web application workflows.
- Built and worked with Django-based applications under guided mentorship, strengthening understanding of MVC architecture, ORM, and project structuring best practices.
- Gained hands-on experience designing and consuming RESTful APIs, implementing backend logic for data handling, routing, and authentication flows.
- Developed foundational competency in backend development concepts including request-response cycles, middleware, and database integration using Django ORM with MySQL/SQLite.

## FEATURED PROJECTS

**AI Movie Recommendation System** | Python · Flask · Scikit-learn · TF-IDF · React · TMDb API [GitHub](#)

- Built a content-based recommendation engine using TF-IDF vectorisation and cosine similarity to match user preferences with relevant movie titles from a curated dataset.

- Integrated TMDb API for real-time metadata retrieval, enriching recommendations with posters, ratings, and genre details.
- Designed a Flask REST backend with modular endpoints and a React frontend, applying Pandas and Scikit-learn for data preprocessing and model evaluation.

### Secure Health API – Microservices & Security System | *Flask · MySQL · Keycloak · Docker · Jenkins · JWT · AES-256 · TLS* [🔗 GitHub](#)

- Designed a production-grade healthcare API with RBAC via Keycloak, implementing TLS (in-transit) and AES-256 encryption (at-rest) for sensitive patient data protection.
- Architected Docker-based microservices covering API, database, authentication, and CI/CD layers; automated deployment and health monitoring via Jenkins pipelines.
- Implemented RESTful endpoints with JWT authentication and wrote unit tests using pytest to validate endpoint reliability and security behaviour.

### Resume Parser & Skill Extraction System | *Python · Flask · NLP · Regex · ML Classification* [🔗 GitHub](#)

- Built an NLP-powered pipeline to extract structured information (skills, education, work experience) from raw resume documents using regex patterns and basic ML classification.
- Applied prompt-engineering principles to structure and post-process LLM-assisted extraction outputs, improving consistency across varied resume formats.
- Demonstrates patterns similar to **document understanding pipelines used in LLM and RAG-based systems**, including information extraction, chunking, and structured output generation.

### AI Personal Physical Trainer | *Python · Flask · REST API · Prompt Engineering* [🔗 GitHub](#)

- Developed an AI-powered personal trainer application delivering personalised workout recommendations and fitness guidance using ML-based logic.
- Integrated structured prompt engineering techniques to generate context-aware training plans via LLM API calls, producing well-formatted, user-tailored responses.
- Built a REST API backend to manage user input, session state, and AI-driven recommendation delivery.

### Smart E-Commerce System – Microservices Full Stack | *React · Flask · MySQL · RabbitMQ · Docker · Tailwind CSS* [🔗 GitHub](#)

- Built a scalable e-commerce platform with independent microservices for Inventory, Cart, Payment, and Discount, each exposing its own REST API.
- Integrated RabbitMQ for asynchronous event-driven communication between services; containerised all components with Docker.
- Developed a responsive React + Tailwind CSS frontend, ensuring seamless interaction with backend microservices.

## ADDITIONAL PROJECTS

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### Smart OPD System – Hackathon Winner (Getwork LEAD 2024) | *Flask · MySQL · HTML · CSS · Bootstrap* [🔗 GitHub](#)

- Hospital OPD management system with patient scheduling, queue handling, and RBAC-based workflows for admin and medical staff. Won 1st place at Getwork Hackathon 2024 against multi-university competition.

### TaskFlow – Task Management Application | *Python · Flask · REST API* [🔗 GitHub](#)

- RESTful task management system supporting create, update, and tracking workflows with user-based access control.

### FixitNow – Home Service Marketplace | *Django · REST API · MySQL · Razorpay · Bootstrap* [🔗 GitHub](#)

- Service marketplace with Django, multi-role RBAC, and Razorpay payment gateway integration for end-to-end service booking.

### Blood Bank Management System | *Flask · REST API · MySQL · React* [🔗 GitHub](#)

- Managed donor/recipient records with REST APIs; implemented donor-matching logic and real-time blood inventory tracking.

### ESP32 Cybersecurity Captive Portal | *ESP32 · C++ · Networking* [🔗 GitHub](#)

- Engineered a captive portal on ESP32 to demonstrate network-level cybersecurity concepts and rogue access-point attack vectors.

### Future Predictor Lab – Interactive Web App | *HTML · CSS · JavaScript · GitHub Pages* [🔗 GitHub](#)

- Entertainment web app featuring hacking-simulation UI, async task queues, native browser prompt mimicry, and SEO/GAO optimisations with JSON-LD structured data.

#### **LEAD College Official Website** | *WordPress · PHP · Bootstrap · CSS* [GitHub](#)

- Developed and deployed the official LEAD College website (lead.ac.in) with responsive design and WordPress CMS integration.

#### **St. Thomas College Konni Official Website** | *PHP · HTML · CSS* [GitHub](#)

- Built and deployed the official college website (stthomascollegekonni.com) using PHP with custom HTML/CSS layouts.

#### **Researcher Portfolio Website** | *HTML · CSS · JavaScript · GitHub Pages* [GitHub](#)

- Personal portfolio on GitHub Pages showcasing research publications, certifications, and project documentation.

## PUBLICATION

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### **From CV to Digital Footprint: Expanding Criteria for Employability in the AI Era**

Co-author: Anija Ann Koshy | Book Chapter in *Redefining Careers and Organizations: Leadership, Employment Practices, and AI in the Evolving Workplace* | LEAD College & Zodha Research Solutions, 2025

DOI: <https://doi.org/10.5281/zenodo.17984401>

## CERTIFICATIONS

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- Build Computer Vision App with Azure – Microsoft (2025)
- Foundations: Data, Data, Everywhere – Google (2025)
- Web Development using React JS – Srishti Innovative (2026)
- Android App Development using Flutter – Srishti Innovative (2026)
- Ethical Hacking Starter Program – Offenso Hackers Academy (2026)
- AI Aware Badge – AI For All (CBSE & Intel) (2025)
- Website Design & Development – Infosys Springboard (2024)
- Software Foundation – C++ – Ethnotech Academy (2023)

## ACHIEVEMENTS

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- **Winner** – Getwork Hackathon 2024 (1st Place, Multi-University Competition)
- **National Seminar Paper Presentation** – University of Calicut (2026)
- **Rajyapuraskar Scout** – Bharat Scouts & Guides (National-Level Award)
- **Platoon Commander** – Bharat Scouts & Guides

## EDUCATION

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### **Master of Computer Applications (MCA)** | 2025 – 2027 (Expected)

Specialization: Advanced Cloud Technologies & Big Data | LEAD College (Autonomous), Palakkad

### **Bachelor of Computer Applications (BCA)** | 2022 – 2025 | CGPA: 7.09/10

Specialization: Cloud Computing, Ethical Hacking & Cyber Security | Srinivas University, Mangalore

## Language

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**Malayalam** | Native Proficiency

**English** | Professional Proficiency

**Hindi** | Intermediate Proficiency