

Nakul Krishnakumar

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EDUCATION

Indian Institute of Information Technology

Bachelor of Technology in Computer Science and Engineering – CGPA: 8.73

Kottayam, Kerala

August 2023 – April 2027

RELATED COURSEWORKS

- Statistics, Probability and Random Processes
- Calculus and Differential Equations
- Computer Organization
- Database Management
- Operating Systems
- Data Structures & Algorithms

EXPERIENCE

Backend Developer

Kerala Police Cyberdome

October 2025 – Present

Remote

- Contributed to building a backend service for a **CSAM take down** system for Kerala Police Cyberdome.
- Designed and secured 10+ authenticated API routes, ensuring zero data leaks and maintaining 100% compliance with content handling policies for sensitive CSAM data of 1000+ real life cases securely.
- Integrated webhook endpoints to connect the service to web crawlers and dark web crawlers for hash matching.

Open Source Contributor ([Link](#))

stdlib-js/stdlib

August 2025 – Present

Remote - Austin, TX

- Successfully contributed 30+ PRs including **entire distance metrics namespace**, core math algorithms, focusing on speed and efficiency.
- Implemented **core ML algorithms** for model training and inference on the web, with **C addons**.

AI Engineer Intern

Bluecast Technologies

May 2025 – August 2025

Kochi, Kerala

- Implemented **Computer Vision pipelines** using SOTA models, achieving over **95% accuracy** across user datasets for face detection and recognition SDKs, including mobile development.
- Engineered production-ready **RAG-based LLM** assistants using **LangChain**, **OpenAI APIs**, and **pgvector**, leveraging distributed and parallel systems to cut client query response time by 60%.

PROJECTS

MarcAI - Multi Agent Code Review System | *LangGraph, Azure OpenAI, FastAPI*

[Code](#)

- Developed a FastAPI + LangGraph **multi-agent orchestration** to run Ruff, ESLint, Bandit, Semgrep, Radon and Xenon **in parallel** — **3x faster than sequential**.
- Built a hardened, zero-execution pipeline with **safe subprocess patterns**.
- Synthesized and prioritized findings with Azure GPT-4 with **tool calling**, into **Markdown reports** (Explainer latency 5–10s) that provide “why/how-to-fix” guidance.

Z.ly - URL Shortener | *NodeJS, ExpressJS, MongoDB, EJS*

[Live](#) [Code](#)

- Implemented **Server-Side Rendering** by using **EJS**, improving the performance by 30%.
- Utilised **JWT token-based authorization** to safe guard the site.

VidhAI - AI Legal Assistant | *Streamlit, Langchain, Azure OpenAI, FastAPI, Pinecone*

[Live](#) [Code](#)

- Developed an AI-powered legal assistant for Bharatiya Nyaya Sanhita (BNS), enabling users to query 500+ legal sections with 98%+ retrieval accuracy.
- Implemented **RAG** using OpenAI LLMs, **Langchain** and **Pinecone** to ensure fact-grounded responses with <5% hallucination.

TECHNICAL SKILLS

Languages: Python, C, C++, Go, Javascript, Java

AI & ML: PyTorch, OpenCV, Langchain, LangGraph, pgvector, Pinecone, Pandas.

Frameworks: ExpressJS, NodeJS, EJS, FastAPI, ReactJS, NextJS, TailwindCSS, Bootstrap

Other: Bash, Postman, Git, Docker, AWS, Kafka, Redis, MongoDB, Supabase, Postgres, SQL

ACHIEVEMENTS & CERTIFICATIONS

- **Hac'KP 2025 Winner** (Kerala Police Annual International Hackathon) — Most Lightweight Solution Award
- **Machine Learning Specialization** by Stanford & DeepLearning.ai — [View Certificate](#)
- **Introduction to TensorFlow for AI, ML & DL** by DeepLearning.ai — [View Certificate](#)
- **Volunteered at Mozilla RCC Responsible AI Conference** (Kumarakom, Kerala) — [Link](#)