

# RAJATH KIRAN A

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## SUMMARY

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Final-year B.E. Computer Science student (CGPA 8.8/10) specializing in machine learning, deep learning, and full-stack AI development. Experienced in building CNN-LSTM models on real-world medical datasets, designing RAG pipelines with Gemini, and deploying production-grade systems on Google Cloud. IEEE award winner for an ed-tech platform; 2× VTU topper on Code360.

## EDUCATION

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**Vivekananda College of Engineering & Technology, Puttur | VTU, Karnataka** 2023 – 2027  
B.E. in Computer Science & Engineering | CGPA: 8.8 / 10.0  
*Relevant Coursework: Data Structures & Algorithms, Probability & Statistics, Linear Algebra, Operating Systems, Database Systems, Machine Learning*

**Narendra PU College, Puttur** 2021 – 2023  
Pre-University (PCMC) — Physics, Chemistry, Mathematics, Computer Science | Score: 93.33%

**Morarji Desai Residential School, Machina** 2016 – 2021  
SSLC (Class 10) | Score: 98.08%

## SKILLS

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**Programming Languages:** Python, C, C++, Java, JavaScript

**Machine Learning & AI:** Machine Learning, Deep Learning, CNN, LSTM, NLP, RAG pipelines, Reinforcement Learning, PyTorch, Librosa, Scikit-learn, Hugging Face, Generative AI, Prompt Engineering

**Frameworks & Libraries:** React.js, Node.js, Express.js, TailwindCSS

**Cloud & DevOps:** Google Cloud Platform (GCP), Vertex AI, Firebase, Docker, Kubernetes, CI/CD, GitHub Actions

**Databases & Tools:** Supabase, MongoDB, SQL, Git, Figma, Linux

## PROJECTS

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**COPD Detection & Severity Classification (Python, PyTorch, Librosa, CNN-LSTM)** 2025 – Present  
[github.com/Rajath2005/COPD](https://github.com/Rajath2005/COPD)

- Designed and implemented a CNN-LSTM hybrid deep learning model for automated COPD detection and 4-class severity grading (Normal/Mild/Moderate/Severe) on the ICBHI 2017 Respiratory Sound Database (920 recordings, 6,898 annotated respiratory cycles), targeting >90% binary classification accuracy.
- Built complete audio preprocessing pipeline including noise reduction, Mel-spectrogram generation (128 bands), MFCC extraction (40 coefficients), and data augmentation (time stretching, pitch shifting), reducing preprocessing time by automating 6,898-cycle segmentation from annotation files.

**Code Review RL Environment (Python, FastAPI, Docker, Hugging Face Spaces)** 2025

[github.com/Rajath2005/code-review-env](https://github.com/Rajath2005/code-review-env) | [huggingface.co/spaces/BugHunter28/code-review-env](https://huggingface.co/spaces/BugHunter28/code-review-env)

- Engineered an OpenEnv-compliant reinforcement learning benchmark with 3-tier curriculum (easy/medium/hard), 32 hand-crafted Python snippets, dense reward signals, and sandboxed code execution.
- Deployed containerized FastAPI environment on Hugging Face Spaces via Docker, implementing MDP-standard reset/step semantics, deterministic grading, and strict (0,1) reward clamping for evaluator compatibility.

**AyuDost — AI Healthcare Platform (React.js, Node.js, Supabase, Gemini, GCP)** 2024 – Present  
[mediq-health.netlify.app](https://mediq-health.netlify.app)

- Led development of full-stack healthcare platform serving 20+ users, integrating Vertex AI/Gemini for AI-assisted diagnostics, Google Maps API for hospital locator, and Supabase authentication with RAG pipeline for Ayurvedic knowledge retrieval.
- Architected a 10-step RAG pipeline combining Pinecone vector search with MongoDB keyword search, achieving context-aware Ayurvedic responses with a hallucination-check step before final delivery.

**Englisho — English Learning Platform (HTML5, CSS3, JavaScript, Web Speech API)** May 2024  
[github.com/Rajath2005/Englisho.io](https://github.com/Rajath2005/Englisho.io)

- Won 1st place at IEEE I<sup>2</sup> CONNECT-2K24 (IEEE Mangalore Subsection & VCET) for building an interactive English learning platform with quiz engine, text-to-speech, and dictionary, competing against 30+ teams.

## EXPERIENCE

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**Nexara — Web Developer (Freelance) | Remote** Nov 2024 – Dec 2024

- Delivered 2 production websites (Plumbing Services + NGO) using WordPress and Divi theme, completing full setup, plugin configuration, and performance optimization within a 6-week engagement.
- Designed social media content (Reels, Carousel Posters) in Canva for 3 brand clients, increasing digital engagement through structured visual campaigns.

## CERTIFICATIONS & AWARDS

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- IEEE I<sup>2</sup> CONNECT-2K24 Winner — IEEE Mangalore Subsection & VCET Student Branch (2024)
- 2× VTU Topper — Code360 30-Day Coding Challenge (Naukri Code360 Platform)
- Google Cloud Arcade 2026 — Silver League, 50+ badges (GCP, Kubernetes, BigQuery, Serverless, CI/CD)
- NPTEL — The Joy of Computing Using Python, IIT Madras (Score: 78%)
- Elements of Artificial Intelligence — University of Helsinki & MinnaLearn
- Introduction to Generative AI — Google Cloud
- Anthropic — Claude Code in Action, AI Fluency: Framework & Foundations, Claude 101
- Google Prompting Essentials & Google AI Essentials — Google (2026)
- React.js Bootcamp, Node JS, DSA, C++, Linux, Docker & Kubernetes — Infosys Springboard / Scaler
- Responsive Web Design — freeCodeCamp