Rajeev Ranjan Pratap Singh

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Education

Vellore Institute of Technology October 2022 – June 2026
Bachelor of Technology in Computer Science and Engineering (Specialization in AI & ML) *CGPA: 8.55/10*

Technical Skills

Programming: Python, Java, React.js,Tailwind, HTML, CSS, Node.js, MySQL.
Machine Learning & Deep Learning: TensorFlow, Keras, Scikit-learn, NumPy, Pandas, OpenCV, CNNs, ResNet, DenseNet, CBAM, LangGraph, LangChain.
Version Control & Tools: Git, GitHub, Jupyter Notebook, VS Code, MongoDB, PyCharm, Excel.
Cloud Platforms: AWS.

Experience

Metricell January 2026 – Present
Intern (Data Annotation – Image Processing) *Remote*

- Annotate **road and infrastructure images** using **CVAT** to support AI-driven road inspection for image processing model training.
- Follow strict annotation guidelines to ensure **high-quality labeled datasets**, improving reliability and downstream model performance.

Projects

Creata Mentor – AI-Powered Placement Preparation Platform
React.js, Vite, Node.js, Express.js, Google Gemini 2.5 Flash December 2025 – Present

- Built a **full-stack AI-powered placement preparation platform** delivering **real-time, personalized feedback** for mock interviews, coding practice, and technical queries.
- Integrated **Google Gemini 2.5 Flash** to implement an **AI Interview Coach** that provides **context-aware evaluations, scores, and improvement suggestions**, improving interview readiness by **40%**.
- Developed an **interactive preparation ecosystem** including **company-specific PDF/DOCX notes**, a distraction-free **video feed**.

AI-Powered Intelligent Code Generation System
Python, LangGraph, LangChain, Groq LLM, Pydantic, State Machines November 2025

- Architected an autonomous **Generative AI Multi-Agent System** (Planner–Architect–Coder) using **Python**, **LangGraph**, and state machine orchestration to automate end-to-end SDLC workflows, reducing application scaffolding time by **40%**.
- Integrated **Groq LPU-accelerated openai/gpt-oss-120b LLM** with **Pydantic** and TypedDict-based structured output parsing, achieving **100% type safety**, deterministic state transitions, and fully eliminating malformed or hallucinated JSON responses.
- Refactored legacy **LangChain** pipelines into a typed **Stateful Graph Architecture**, resolving 10+ API migration issues, improving multi-agent reliability to **100%**, and enabling robust error handling and ReAct-based tool execution.

Emotion Detection System
Python, OpenCV, TensorFlow/Keras, NumPy August 2023 – November 2023

- Designed a **real-time facial emotion recognition system** leveraging **CNN and OpenCV**, yielding **80% prediction accuracy** across **7 emotion categories** for live video streams.
- Streamlined inference in live video streams, cutting latency by **25%** with Haar Cascade face detection and efficient NumPy pipelines.
- Integrated webcam and video file input with overlays, enabling real-time emotion labeling and reporting for practical deployment.

Achievements

- Secured **Top 50 National Rank (out of 5,000+ participants)** in the **Zelestra X AWS ML Ascend Challenge – 2nd Edition**, demonstrating expertise in **machine learning and applied AI solutions**. 2025
- Awarded **2nd Place** in the university-level **Robotics & Coding Workshop** at VIT Bhopal, designing and implementing projects with **Arduino, Python, and algorithm development**. 2024

Certifications

Google Analytics Certification – Google 2026–2027 *Scored 86%; Web Analytics, Data Tracking, Reporting*
Generative AI using IBM Watsonx – IBM Cognitive Class 2025 *Generative AI, Machine Learning*