

AYUSH SINGHAI

📍 IIIT Sri City, Andhra Pradesh, India

☎ +91-9399272848

✉ ayushsinghai3105@gmail.com

in [ayush-singhai-72931b258](#)

🔗 [ayush31o5](#)

Professional Summary

Computer Engineering undergrad at IIIT Sri City with expertise in end-to-end system design: built and deployed microservices, real-time WebSocket apps, OCR/vision pipelines and multimodal AI models to solve complex problems at scale.

Education

Indian Institute of Information Technology (IIIT), Sri City

Expected May 2026

B.Tech in Computer Engineering

Relevant Coursework: Data Structures & Algorithms, DBMS, Machine Learning, Web Development

Experience

Full Stack Developer Intern – INVENT FOR CHANGE

May 2024 – Aug 2024

- Architected and implemented a React & Node.js web portal for secure document printing via Wi-Fi Direct/Bluetooth, including dynamic QR-code generation and scanning.
- Built backend microservices (Express.js) for job queuing, and used Redis streams for real-time status updates over WebSockets.
- Integrated Razorpay SDK for seamless payments; deployed on AWS EC2 with Docker, Nginx & Gunicorn, achieving 99.5% uptime.
- Automated PDF/DOCX parsing with LibreOffice headless mode and serverless AWS Lambda for on-demand format conversions.

Software Development Intern – OncoDisha

Nov 2024 – Feb 2025

- Developed core Django REST APIs and PostgreSQL models for patient registration, prescription uploads and appointment scheduling.
- Implemented user authentication with JWT, role-based access control and encrypted data storage.
- Built batch data pipelines using Celery for periodic email reminders and nightly report generation.
- Enhanced front-end dashboards (React) for doctors and dietitians to monitor patient metrics and compliance in real time.

Software Backend & AI Intern – OncoDisha

Mar 2025 – Present

- Extended NLP chatbot features with Hugging Face Transformers, adding context-aware follow-up questions for financial aid eligibility.
- Deployed conversational AI microservices on AWS EKS with horizontal autoscaling and A/B testing capabilities.
- Integrated OCR-based medicine detection pipeline using Tesseract and custom CNN classifiers to auto-extract prescription details.
- Monitored and optimized service performance with Prometheus alerts and Grafana dashboards, maintaining sub-5% error rates.

AI Research Intern – MULTIMEME

Mar 2025 – Jun 2025

- Developed a multimodal meme classification pipeline: preprocessed images with OpenCV, extracted text via Tesseract & custom transformers, and generated joint CNN embeddings.
- Trained and fine-tuned vision-language models on a 50k-meme dataset (English, Hindi, code-mixed), boosting classification F1-score to 0.87.
- Packaged inference in a Flask microservice container, served at 50 FPS on CPU and 150 FPS on GPU; demonstrated real-time mobile integration on iOS.

Projects

Job Finder Platform w/ Blog

[Cubicals-main](#)

- End-to-end job portal with user auth, role-based dashboards, search filters, and blog CMS—built with Node.js, Express, React, MongoDB Atlas.
- Integrated JWT for secure sessions, Cloudinary for image hosting, and Multer for file uploads.
- Implemented notification microservice (RabbitMQ) and email workflows (Nodemailer).

OCR Text Extraction & Structuring

- Built robust OCR pipeline for Hindi/Devanagari: preprocessing with morphological ops, text recognition via Tesseract + fine-tuned transformers.
- Retained layout metadata—line spacing, fonts, special chars—and output structured JSON for downstream NLP analytics.
- Exposed via FastAPI endpoint with async workers, handling 500 concurrent requests.

3D Hand Gesture Recognition

- Enhanced 3D hand-pose estimation using custom bone-constraint losses on the FreiHAND dataset, reducing mean per-joint error by 15 mm.
- Implemented real-time inference on edge devices (Jetson Nano) at 30 FPS with <10 MB memory footprint.

Skills

- Languages:** Python, Java, JavaScript, SQL, HTML/CSS
- Frameworks:** Django, Flask, Node.js/Express, React
- Databases:** PostgreSQL, MongoDB, MySQL
- Cloud & DevOps:** Docker, Kubernetes, AWS (EC2, EKS, S3), Git, Nginx
- AI/ML:** TensorFlow, PyTorch, OpenCV, Hugging Face Transformers, OCR pipelines

Certifications

- Python Programming Certificate:** Completed comprehensive Python course. [\[View PDF\]](#)
- Intermediate Web Development Certificate:** Mastered HTML, CSS, and JavaScript fundamentals. [\[View PDF\]](#)
- Full-Stack Web Development Certificate:** Built dynamic MERN-stack applications from scratch. [\[View PDF\]](#)
- Deep Learning Specialization (Coursera) – Andrew Ng:** Mastered neural networks, CNNs, RNNs, and sequence models. [\[View PDF\]](#)

Coding Profiles

[ayush31o5](#)

[LeetCode: Ayushsinghai](#)

[Portfolio](#)