

# Ayush Jha

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[LinkedIn](#) | [GitHub](#) | [LeetCode](#) | [Portfolio](#)

## SUMMARY

ML Engineer and Full-Stack Developer with experience in building production-ready AI systems, medical image analysis, and real-time applications. Skilled in PyTorch, FastAPI, and AWS with a focus on deploying scalable ML solutions.

## EDUCATION

### • Birla Institute of Technology Mesra

December 2021 - May 2025

Bachelor of Technology in Information Technology

Ranchi, Jharkhand

- CGPA: 8.06

## EXPERIENCE

### • Synapse Health Tech

June 2025 - Present

Associate Data Scientist

Remote

- Spearheaded the development of the Bankability MVP solution utilizing React-Native, NestJS, Websockets, Google Gemini, and Supabase, resulting in a streamlined banking application interface designed Specially for Neurodivergent users.
- Architected and developed FastAPI backend with WebSocket integration for real-time image segmentation and processing, utilizing OpenCV for computer vision operations and achieving sub-second response times, for the Bankability Project.
- Engineered Dental Radiograph Analysis system integrating two PyTorch models for tooth numbering and disease prediction, with Groq API for LLM inferencing to generate comprehensive dental analysis reports, achieving 90% accuracy in disease diagnosis.
- Deployed dental radiograph analysis system using Docker containers for both frontend and backend on AWS Elastic Container Registry (ECR) and Elastic Container Service (ECS), ensuring scalable and reliable production environments.

### • Aspirare Communications

January 2025 - April 2025

Bengaluru, Karnataka

Software Engineering Intern

- Developed Field Service Management System using React-Native and FastAPI, integrating Google Maps API for real-time tracking of technicians and route optimization.
- Implemented GCP-based backend services, improving field agent assignment efficiency and reducing manual scheduling overhead.

### • Tata Consultancy Services

May 2024 - June 2024

Noida, Uttar Pradesh

Project Intern

- Engineered an internal full-stack application using FastAPI, React, and SQLite, diagnosing API inefficiencies and optimizing response time by 30% to enhance user experience.
- Optimized Azure cloud deployment for improved scalability and reduced downtime, presenting architectural improvements to leadership and receiving recognition.

## PROJECTS

### • N8N AI News Automation

September 2025

Tools: N8N, GNews API, NewsAPI, Google Gemini 2.5 Pro, Telegram API



- Developed an automated news aggregation system using the n8n workflow platform, integrating GNews and NewsAPI with Google Gemini 2.5 Pro for AI-powered summarization and Telegram-based delivery.
- Achieved 90% reduction in manual content curation time through scheduled triggers, automated data pipelines, and real-time multi-channel distribution.

### • Gastrointestinal-Polyp Segmentation

June 2025

Tools: Python, PyTorch, Attention U-Net, Albumentations, CUDA AMP, Grad-CAM, TensorBoard, OpenCV



- Built an Attention U-Net pipeline for medical polyp segmentation using PyTorch, incorporating Albumentations for augmentation and CUDA AMP for efficient mixed-precision training.

- Achieved **0.92 Dice score** with Grad-CAM visualizations for model interpretability, enabling clinicians to understand segmentation decisions.

- **Rice Disease Detection System**

November 2024



Tools: Python, React, Tailwind CSS, FastAPI, TensorFlow, Scikit-Learn, NumPy, Pandas, Firebase

- Developed a full-stack rice disease detection system using TensorFlow CNN and Scikit-learn Random Forest, with a React-Tailwind frontend and FastAPI backend for real-time image and environmental data analysis.

- Implemented dual-model architecture combining deep learning and traditional ML approaches, with Firebase authentication and production deployment on Vercel and Render.

## SKILLS

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- **Programming Languages:** C++, Python, SQL

- **Frameworks and Libraries:** FastAPI, Streamlit

- **ML/DL:** Numpy, Pandas, Matplotlib, PyTorch, Scikit-Learn, OpenCV, Hugging Face

- **Database Systems:** PostgreSQL, Supabase

- **Cloud and DevOps:** AWS (IAM, EC2, Lambda, S3, ECR, ECS), GitHub Actions, Docker

- **Developer Tools:** Git, GitHub, Ngrok, N8N, OpenAI Agent-Builder