

# Ayush Jha

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

## 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

- Leading development of the Bankability **eye-tracking** solution for banking applications using Kotlin and MediPipe libraries, implementing multiple linear regression algorithms for precise gaze tracking and user behavior analysis, achieving **85-90%** accuracy in gaze prediction
- 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

Software Engineering Intern

Bengaluru, Karnataka

- Developed and maintained Field Service Management System using React-native, React, Google Maps API , GCP and FastAPI.
- Collaborated with cross-functional teams to optimize business processes and improve system efficiency.

### • Tata Consultancy Services

May 2024 - June 2024

Project Intern

Noida, Uttar Pradesh

- Engineered an internal TCS project using FastAPI, React, and SQLite, optimizing API response time by **30%**.
- Optimized cloud deployment strategy on Azure, improving scalability and reducing downtime.
- Diagnosed API inefficiencies, reducing server response time and enhanced UX.
- Presented technical insights to the leadership team, receiving recognition for architectural improvements.

## 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 multiple APIs (GNews, NewsAPI) to collect and process AI-related content with **100%** automation efficiency.
- Implemented AI-powered content summarization using Google Gemini 2.5 Pro model, reducing manual content curation time by **90%** and delivering personalized news digests through Telegram integration.
- Architected scalable workflow automation solution with scheduled triggers, data processing pipelines, and multi-channel delivery systems, supporting daily execution and real-time content 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 polyp segmentation, achieving 0.92 Dice and 0.89 IoU scores.
- Automated preprocessing and augmentations via Albumentations, tripling data and reducing imbalance.

- Used hybrid loss (Dice + Focal + Tversky) with mixed precision, cutting GPU memory by **40%** and training time by **25%**.
- Deployed inference module with batch CLI, Grad-CAM visuals, and TensorBoard, enabling  $5\times$  faster clinical reviews.

- **Rice Disease Detection System**

November 2024



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

- Built a rice disease detection system using TensorFlow (CNN) and Scikit-learn (Random Forest) with high accuracy.
- Built a React-Tailwind form for real-time image and environmental data input, integrated with a FastAPI backend with both models for seamless interaction.
- Implemented authentication (email/password, Google) and secured data in Firestore.
- Securely Deployed the Frontend to Vercel and backend to Render

## SKILLS

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- **Programming Languages:** C++, Python, SQL
- **Frameworks and Libraries:** FastAPI, NumPy, Pandas, Scikit-Learn, PyTorch, Streamlit, OpenCV
- **Database Systems:** PostgreSQL, Supabase
- **Cloud Technologies:** AWS (IAM, EC2, Lambda, S3, ECR, ECS)
- **Developer Tools:** Git, GitHub, Docker, Ngrok, N8N