

Krutibash Mohapatra

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Summary

I'm a lifelong learner and self-driven software engineer, experienced in building solutions using Java, Python, JavaScript, and frameworks like Node.js, FastAPI and React. I approach challenges with creativity and a critical mindset, applying knowledge of databases (SQL, PostgreSQL, MongoDB) and cloud services (AWS, Docker, Kubernetes) to deliver scalable applications. With hands-on experience across the full software development lifecycle — from design to debugging and maintenance — I bring enthusiasm and attention to detail to every project, aiming to create solutions that inspire and deliver real value.

Technical Skills/Tools

Programming Languages: JavaScript, Node.js, Python, Java, C++
Frameworks: ReactJS, NodeJS, ExpressJS, Mongoose, Langchain, Socket.io, FastAPI, Flask
Databases: SQL, PostgreSQL, MySQL, MongoDB
Tools: GitHub, Postman, VS Code, LLMs, Virtualization(VMware)
Cloud & DevOps: AWS (EC2, S3, DynamoDB), Docker, CI/CD, Kubernetes, SDLC, Agile

Experience

Extracting text from images using Keras and easy OCR

2022 –Feb 2024

XIM University, Bhubaneswar

- Created **OCR** pipeline integrating **KerasOCR** and **EasyOCR**, **95% accuracy** in text extraction from images.
- Trained **CNN-based** models mainly on **ICDAR 2013**, **COCO-TEXT**, optimising accuracy across text orientations.
- Designed with the motivation to **empower visually impaired people**, enhancing accessibility via text digitisation

Gray Matter, White Matter and CSF abnormalities in PD: Comparative Analysis of Brain MRIs of PD Patients against Healthy Controls

2023 – Feb 2024

XIM University, Bhubaneswar

- Conducted a **voxel-based morphometry (VBM)** study on **2,206 PD** patient MRIs using **MATLAB & CAT12** in **SPM12**
- Identified **gender-based** structural variations and key biomarkers for early PD detection.
- Large-Scale Data Handling** – Processed MRI data from 2,206 PD patients & 849 controls (PPMI dataset).

Projects

Real-time synchronous chat application

Tech-Stack: Socket.IO, ReactJS, ExpressJS, MongoDB, NodeJS, Mongoose, JWT, Zustand

- Leveraged **JWT** for **user authentication** and **session management**.
- Developed a real-time chat application supporting **direct messaging**, **group chats**, and **file sharing**.
- Implemented **end-to-end encryption** for secure communication.
- Leveraged **Google OAuth 2.0** user authentication
- Managed global application state efficiently using **Zustand** for seamless real-time interactions
- Currently working on integrating **peer-to-peer (P2P)** communication features and preparing the application for **deployment** on **AWS**.

AI-Powered E-Learning Platform

Tech Stack: FastAPI, Python, LangChain, DynamoDB, ReactJS, AWS S3 (in progress), Manim, MoviePy, FFmpeg

- AI-driven platform that **dynamically** generates personalised curricula and converts them into engaging video lessons..
- Leveraged **Retrieval Augmented Generation (RAG)** to ingest and index educational content.
- AI-powered text-to-video conversion with **TTS integration**, **Manim**-generated animations and interactive quizzes.
- Set up cloud storage and deployment pipelines (**AWS S3**, **CloudWatch**).
- Collaborated** with a fellow developer from the ideation phase through the development phase and working towards the deployment of the project

Education

Bachelor's degree: Computer Science and Engineering

Aug 2020 – Mar 2024

XIM University, Bhubaneswar, India

Relevant Coursework: Data Structures and Algorithms, Software Development Lifecycle, Agile, Object Oriented Programming, Relational Database Management Systems, Computer Networking, Web Development, Computer Vision and Image Processing, Operating Systems
Verbal communicator, collaboration, Parallel and Distributed Computing, Networking and Security

Certifications & Awards

AWS Technical Essentials
Google Data Analytics Professional Certificate
The Complete Full-Stack Bootcamp

- AWS, Nov 2023
- Coursera, Aug 2024
- Udemy, Nov 2024