

# Chaitanya Raj

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**Summary**

**Full-Stack AI Software Engineer** specializing in backend-focused AI systems using Flask, MERN/PERN and ORM-based architectures. Experienced in building **RAG pipelines** with **LangChain**, deploying Dockerized ML services, and delivering low-latency APIs (<1s), with React and Next Js for modern frontend integration and strong Data Structures and Algorithms fundamentals.

## Education

### Bennett University, Greater Noida

(2027)

*B.Tech in Computer Science*

- GPA: 8.20 (current)

## Work Experience

### Ignou Tutor — Node.js Developer Intern

Dec 2025 – Present

- Assisted in backend development using **Node.js**, **Express.js**, and **TypeScript** with a **MySQL** database.
- Developed and maintained **RESTful APIs** and integrated backend services with databases.
- Contributed to feature development, bug fixes, and performance optimizations.
- Collaborated with the core engineering team and participated in code reviews and technical discussions.

## Technical Skills

- **Languages:** Java, JavaScript, Python, TypeScript, HTML, CSS
- **Frameworks:** React.js, Next.js, Node.js, Express.js, Flask, Tailwind CSS
- **Databases & ORM:** MongoDB, PostgreSQL, MySQL, Vector Db ,Prisma ORM , Sequelize ORM.
- **AI / ML:** Langchain , RAG, Hugging Face, Prophet, pandas, NumPy, Time-Series Forecasting, Anomaly Detection
- **DevOps & Tools:** Docker, Docker Compose, Git, GitHub, Render, Vercel
- **Others:** REST APIs, Async/Await, Routing, Chrome Extensions

## Projects

### FinSight-AI

[GitHub](#) [Demo](#)

- Architected a full-stack AI finance platform featuring automated expense tracking, predictive spending analytics, and anomaly detection with ~90% categorization accuracy.
- Optimized ML models for forecasting and categorization, handling 1,000+ records per user with sub-second (j1s) inference latency.
- Implemented a **LangChain**-powered Retrieval-Augmented Generation (RAG) chatbot using **ChromaDB**, enabling semantic Q&A over FinSight AI documentation with source-grounded responses.
- Built an ingestion pipeline with PDF parsing, chunking, and HuggingFace embeddings to support scalable vector search and retrieval.
- Containerized ML services using Docker and Docker Compose, reducing environment setup time from hours to under 10 minutes and improving deployment consistency.
- Tools: Next.js, Tailwind CSS, Node.js, Express.js, PostgreSQL, Prisma, Python, Flask, LangChain, ChromaDB, HuggingFace, Gemini API, Docker, Railway, Vercel.

### Buddy

[GitHub](#) [Demo](#)

- Engineered a high-concurrency MERN-stack ride-sharing application utilizing a custom matching algorithm and real-time GPS tracking for 300+ active users.
- Streamlined user matching through real-time messaging integration, successfully cutting average confirmation wait times from 2 minutes to j30 seconds.
- Integrated precise location APIs for mapping and developed a robust history module that facilitates instantaneous 1-click ride rescheduling.
- Automated deployment workflows using Docker Compose and CI/CD pipelines, slashing developer onboarding and environment setup time by over 95%.
- Tools Used: React.js, CSS, Docker, Docker Compose, Node.js, Express, MongoDB, Render, Vercel.

### AgriConnect

[GitHub](#) [Demo](#)

- **Developed** an AI-driven agricultural analytics suite (MERN/Flask) to process 1,000+ daily field images for visualization on a Framer Motion dashboard.
- **Designed** a Vision Transformer (ViT) with a Deep Gaussian Process Classifier to fuse multi-modal sensor data, achieving 87% validation accuracy in pest detection.
- **Formulated** a decision-theory framework utilizing EVPI/EVPPI to deliver precise irrigation recommendations, increasing farm management efficiency by 50%.
- Leveraged geospatial mapping to monitor crop stress across 500+ acres, replacing manual reporting with automated PDF generation to save 90
- Tools Used: React.js, CSS, Node.js, Flask, MongoDB, Framer Motion.