

VIHAAN THATIPARTHI

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EDUCATION

Indian Institute of Information Technology

Bachelor of Technology in Computer Science

SriCity, AP

2022 – Ongoing (CGPA-8.68)

- **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Software Engineering, Operating Systems, Computer Networks

EXPERIENCE

Research Intern - Mixed Reality Exergames

Jan. 2025 – Apr. 2025

HCI Lab, IIIT SriCity

SriCity, India

- Developed Model Context Protocol (MCP) server with 3 tools for biomechanical analysis integrating LLM with computer vision models for pose comparison and session reporting
- Implemented motion analysis algorithms to detect postural anomalies with 95.2% accuracy across 24 participants

PROJECTS

Colosseum: E-Sports Tournament Hosting Platform | JavaScript, Next.js, React, Docker

2025

- Developed a responsive, full-stack tournament platform using Next.js, React for the frontend, with an Express.js backend.
- Optimized containerization with Docker multi-stage builds, slashing image size by over 60 % and improving deployment consistency.
- Designed a real-time infrastructure monitoring system for MongoDB and Redis, reducing failure-detection time and enhancing system reliability.

NoteThat: AI-Powered Medical Note-Taker | Python, FastAPI, LangChain, Vector DB (Qdrant)

2025

- Developed a scalable backend service using FastAPI to serve an AI-powered medical assistant with intelligent retrieval capabilities.
- Architected a Retrieval-Augmented Generation (RAG) system using LangChain and a Qdrant vector database to index and retrieve information from medical textbooks.
- Orchestrated LLMs (Bio-Mistral) for contextual query responses and integrated OCR systems for text extraction from images.

MicroServeThat | Java, Spring Boot 3, Docker, Kafka, prometheus, kubernetes

2025

- Architected a distributed, event-driven system using Spring Boot 3, engineering decoupled microservices (e.g., Product, Order, Inventory) to ensure independent scalability.
- Implemented an API Gateway (Spring Cloud Gateway) as the single, secure entry point, centralizing request routing, load balancing, and cross-cutting concerns.
- Engineered a resilient messaging system using Kafka for asynchronous communication, ensuring eventual consistency and fault tolerance between services.

LEADERSHIP & COMMUNITY INVOLVEMENT

- **Student Council Member:** Represented a 300-student body, mediating between students and institute administration to resolve campus policy concerns and align interests.
- **Domain Lead, Google Developer Groups:** Led Git/version control workshops for 60+ juniors and co-organized a CTF event, authoring 4 steganography challenges centered around git.

TECHNICAL SKILLS

Languages: JavaScript, SQL, Java, Python

Frameworks & Libraries: FastAPI, React, Next.js, LangChain, Express.js

AI/ML: LLM Orchestration, ML Model Development (scikit-learn), MLflow, Data Pipelines

Software Engineering: Object-Oriented Programming, Data Structures & Algorithms, Design Patterns, Domain-Driven Design, Agile Methodologies, Event Driven Architecture

Databases Tools: Qdrant (Vector DB), MongoDB, Redis, DynamoDB, Docker, AWS Services