

Vaishnav Mukund Mankar

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SUMMARY

Software Engineering undergraduate with expertise in building scalable, real-time AI systems. Proficient in Python, Rust, and Cloud Native technologies (AWS, Docker). Proven track record of optimizing backend performance by 30% and architecting end-to-end NLP solutions for complex deployments.

EDUCATION

Pune Institute of Computer Technology (PICT)
B.E. Computer Engineering; CGPA: 9.2

Pune, India
2023 – 2027

EXPERIENCE

AI Developer Intern

Aug 2025 – Feb 2026

Across The Globe

Remote

- Engineered the backend infrastructure for an AI-driven video generation pipeline, delivering personalized multi-lingual content at scale.
- Optimized AWS Lambda execution efficiency, reducing processing time by 30% (from 20m to 14m) and significantly cutting compute costs.
- Architected internal automation workflows, including a Markdown-to-PDF engine and a document-grounded RAG system for instant knowledge retrieval.

PROJECTS

VitalSync | *TypeScript, Python, WebSockets, Docker, Real-time APIs*

- Architected a real-time bilingual medical consultation platform using WebSocket-based full-duplex communication for sub-200ms latency translation.
- Deployed scalable containerized services using Docker to handle concurrent audio streams and LLM inference requests.
- Integrated Whisper and Gemini models to generate structured medical summaries from live audio feeds.

Conversational Intelligence Platform | *Python, NLP, Transformers, Analytics*

- Developed an end-to-end NLP analytics engine to process and visualize unstructured chat data, deriving actionable behavioral insights.
- Implemented transformer-based sentiment analysis and entity recognition pipelines to categorize user intent with high accuracy.
- Designed interactive dashboards for real-time data visualization, enabling users to explore communication patterns dynamically.

Cogni-Mesh | *Python, RAG, Vector Search, LLMs*

- Built a verified, curriculum-aware educational agent using Retrieval-Augmented Generation (RAG) to provide hallucination-free student assistance.
- Optimized vector retrieval algorithms to query large-scale textbook datasets, ensuring contextually relevant and accurate responses.
- Engineered a feedback loop system to continuously refine model answers based on curriculum standards.

PUBLICATIONS

GNN-Based Friend Recommendation: A Graph Embedding Approach for Social Networks

- Accepted for Conference Presentation.
- Compared supervised MLP and retrieval-based friend recommendation systems.
- Demonstrated scalability benefits of ANN-indexed retrieval while maintaining competitive accuracy.
- Designed graph embedding workflows for large-scale social network datasets.

TECHNICAL SKILLS

Languages: Python, Rust, SQL, TypeScript, JavaScript, C++

Frameworks: FastAPI, React, Next.js, LangChain, PyTorch

Cloud & Tools: AWS (Lambda, EC2), Docker, Kubernetes, Git, Linux, PostgreSQL, MongoDB

Concepts: Data Structures & Algorithms, Distributed Systems, System Design, NLP, RAG