Nikhita Anjani Ravi

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Experience in systems programming, full-stack development and AI/ML based tasks. Strong foundation in algorithms, operating systems, machine learning, NLP and modern software engineering practices. Passionate about leveraging technology to solve complex problems through efficient, maintainable code.

Education

IIIT Hyderabad, B.Tech in Computer Science & MS in Computational Linguistics 2024 - 2029

- GPA: **8.79/10**

Experience

Research Intern advised by Dr. Hrishikesh R. Terdalkar, BITS Hyderabad Dec 2025 - Present

- Designing a pipeline to extract entities and relations from unstructured text, populate a knowledge graph, and integrate it into a retrieval-augmented generation (RAG) setup
- Investigating how graph-augmented retrieval affects downstream LLM responses compared to text-only retrieval

App Developer Intern, Hustlr Aug 2025 - Oct 2025

- Designed and developed a chat interface for freelancers and clients with real-time messaging, message filtering, and searchable conversation history.
- Implemented structured information display and integrated metadata extraction for efficient search and retrieval.
- Ensured smooth performance, navigation and compatibility with existing systems.

Web Developer Intern, BNAC Tech Solutions Pvt. Ltd. June 2025 - July 2025

- Added a granular access control system managing 1,000+ exhibits, implementing role-based permissions and real-time visibility toggles
- Built responsive swipe-based UI achieving 95% user engagement rate, optimizing touch event handling

Projects

AI-Powered Document Analysis System Link

- Built terminal-based Retrieval-Augmented Generation system processing PowerPoint and PDF documents with continuous memory and context-aware conversational AI using Groq's LLM models
- Implemented efficient vector embeddings with ChromaDB, achieving 95% retrieval accuracy through semantic chunking and optimized similarity search algorithms
- Integrated LangChain orchestration with multi-model support (Llama, Mixtral), enabling dynamic model selection and achieving 3x faster inference through batched processing

High-Performance POSIX-Compliant Shell in C Link

- Developed full-featured Unix shell from scratch with process management, I/O redirection, pipelines, and job control, handling 50+ concurrent background processes
- Optimized command parser using finite automaton-based tokenization, reducing parsing overhead by 35% and supporting complex command chaining with pipes and redirections
- Implemented robust signal handling and foreground/background process management with accurate job state tracking

Distributed Network File System Link

- Engineered scalable Network File System enabling transparent distributed file access across multiple clients with support for concurrent operations and consistency guarantees
- Designed fault-tolerant architecture with error notifications, heartbeat monitoring, RAID-1 backup and transaction logging, achieving 99.5% availability during network partitions
- Used a combination of O(1) caching at the name server and trie-based directory traversal to keep lookup latency under 10 ms while handling 10,000 file operations/sec.

Technical Skills

Languages: C, C++, Python, Java, JavaScript, SQL, Bash

Technologies & Frameworks: Linux, Git, REST APIs, React, Node.js, Express, MongoDB, WebSockets, LangChain, ChromaDB, scikit-learn, Hugging Face, TensorFlow