

Nihar K T

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About Me

Information Science undergraduate with strong foundations in C++, algorithms, and systems programming. Interested in building performance-oriented software, including game engines, emulators, and backend systems.

Education

Bachelor of Technology — Information Science and Engineering

NMAM Institute of Technology, Nitte

Expected 2027

Internship Experience

Research Intern — Speech-to-Text Transcript System

Manipal Institute of Technology (MIT), 2025

- Researched real-time speech recognition pipelines using Python-based audio processing libraries.
- Implemented audio preprocessing and noise reduction to improve transcription accuracy.
- Built a prototype UI to visualize transcription output and evaluate latency vs accuracy trade-offs.

Projects

1. Chess Engine (C++)

- Engineered a chess engine utilizing 64-bit bitboards and Zobrist hashing, optimizing memory footprint and reducing redundant evaluations.
- Implemented Negamax search with Alpha-Beta pruning, quiescence search, and 3+ advanced heuristics to improve AI decision-making depth.
- Generated 100% compliant pseudo-legal moves for 6 piece types and built an interactive Raylib GUI for real-time game state visualization.

2. Agentic AI Codebase Profiler (C++, Python, Groq API)

- Developed an agentic pipeline that automatically profiles and analyzes the performance of any GitHub repository, using Groq's llama-3.3-70b-versatile API to reason over benchmarking output.
- Built a headless CLI wrapper to decouple target projects from their GUIs/entry points, enabling automated benchmarking across arbitrary codebases.
- Diagnosed non-monotonic performance behavior and implemented autonomous optimization suggestions, completing a 6-phase development roadmap.

3. Pixel Link — URL Shortener (Node.js, Express, MongoDB, Redis)

- Developed a full-stack URL shortener providing RESTful APIs using Node.js and MongoDB, utilizing Base62 encoding for collision-free links.
- Incorporated a Redis Cloud caching layer with a 1-hour TTL, accelerating redirection latency and reducing overall database load.
- Deployed the pixel-art themed frontend on Vercel and backend on Render, featuring a real-time click analytics dashboard.

Technical Skills

Languages: C, C++, Java, Python, JavaScript, HTML, CSS

Tools / Technologies: Git, GitHub, VS Code, Node.js, Express.js, raylib, CMake, MySQL, MongoDB, Redis

Certificates

Google AI Essentials — Coursera

Frontend Development — Scrimba

Languages

English · Hindi · Kannada