Pranav Navandar

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Education

Vishwakarma Institute of Technology, Pune — Pune
Bachelor of Technology in Information Technology — *Aug 2023 – May 2027*
– CGPA: 9.25 (Top 3% in department)

Technical Skills

Languages: C++, Java, Python, SQL, TypeScript
Frameworks & Libraries: Next.js, LangChain, REST APIs, JWT, WebSockets
Databases: MySQL, SQLite, MongoDB
Developer Tools: Git, GitHub, Docker, AWS, Bash
Coursework: Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Operating Systems, Computer Networks

Projects

AutoSearch Engine – Text Autocomplete Service | June 2026
– **Technologies:** C++20, Weighted Dynamic Programming, BK-Tree, Trie, LRU Cache, REST API, Docker
– Engineered a QWERTY keyboard proximity matrix into weighted Levenshtein dynamic programming to rank mistyped candidates based on physical keyboard proximity.
– Designed a hybrid indexing architecture combining a prefix Trie for exact prefix matching with a BK-Tree for approximate string search.
– Reduced query latency to sub-0.1 ms through a thread-safe LRU cache for query-result memoization.
– Exposed the native C++ search engine through a REST API, containerized it using Docker, and built an interactive web dashboard displaying real-time microsecond latency metrics.

MediFlow AI – Clinical Documentation Platform | March 2026
– **Technologies:** Next.js, TypeScript, MongoDB
– Implemented real-time consultation transcription and electronic medical record (EMR) generation.
– Developed drug-interaction safety checks and an audit trail for clinical documentation.
– Reduced the proportion of consultation time spent on documentation from 45% to 20%.

Experience

AgriFlow – Smart Agriculture & Water Resource Optimization System — Sep 2025 – Nov 2025
Project Intern, Sumago Infotech — *Remote*
– **Stack:** Next.js, TypeScript, LangChain, SQLite
– Designed a deterministic water resource optimization algorithm for crop planning.
– Built a hybrid RAG pipeline integrating Pinecone with live weather and mandi-market APIs.
– Benchmarked response quality using Sentence-BERT semantic similarity, achieving an average score of 0.823 across a 100-query evaluation dataset.

Achievements

Best Pitch Award – COEP CSI INSPIRON 4.0 National Hackathon — Mar 2025
– Secured 2nd prize among 1200+ teams in the AI for Smart and Adaptive Systems domain.

Best Presentation Award – Heera Software Startup Hackathon — Apr 2026
– Ranked 3rd among 100+ startup teams and received the Best Presentation Award.

Algorithmic Problem Solving – Solved 900+ problems, LeetCode rating: 1689, CodeChef: 2-star.

Publications

Scopus | Alzheimer Detection using Deep Learning — 2025
– Proposed a CNN-based deep learning framework for automated Alzheimer's disease detection using MRI scans.

Scopus | A Survey on Machine Learning Techniques to Enhance Web Applications — 2025
– Surveyed machine learning techniques for improving web application security, performance, reliability, and user experience, including anomaly detection and predictive analytics.

Certifications

IBM DevOps and Software Engineering Professional Certificate | Coursera — Nov 2025
AWS Academy Graduate – Cloud Foundations | Credly

Extra Curricular

Volunteer, VIT Social Welfare & Development – Muskaan Initiative for Orphaned Kids — Sep 2023 – Oct 2023
Member, The Investment Forum Club – Equity Markets & Financial Analysis — Sep 2024 – Sep 2025