Kunal Vats

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Professional Summary

Recent Bachelor of Technology student in Computer Science and AI with a strong foundation in software development, data structures, and algorithms. Completed coursework and projects in full-stack development, backend engineering, and AI-powered semantic search systems. Eager to leverage analytical abilities to solve complex problems and deliver innovative software solutions that drive impact in a dynamic software engineering environment.

Work Experience

Frontend Developer – Go For Gold | Delhi *Oct 2024 – Oct 2024 | Delhi*

- Developed the Go For Gold website using React JS and Tailwind CSS, delivering a responsive platform for global learners to join the ICPC Bootcamp.

Freelancer Software developer – Infeed Medias *Sep 2025 – Present*

- Responsible for software development of frontend and backend web applications, managing stakeholder relationships with clients, integrating secure payment gateways and REST APIs, and delivering scalable, production-ready solutions with a focus on reliability, performance, and clean architecture.
- - Leveraged engineering principles in designing maintainable and efficient systems, ensuring high availability and performance through structured development practices and robust testing methodologies. Tested Golang backend API endpoints to validate vector embeddings generation and data retrieval from vector databases. Applied AI tools to optimize workflow management for less complex tasks and proactively sought guidance from peers and mentors to improve problem understanding and time management.

Education

Newton School of Technology *Aug 2028*

Bachelor of Technology - BTech Computer science and AI

Volunteer Experience

Volunteer – GDG Rishihood University | Sonipat, Haryana, India *Oct 2024*

- Volunteer

Core Skills

python, Go, Golang, javascript, TypeScript, pandas, Computer Science, numpy, node.js, qdrant, Express.js, Swift (Programming Language), SwiftUI, nativewind, Next.js, Databases, Tailwind CSS, Git, GitHub, Data Visualization, CS, Data Structures & Algorithms

Projects

Go For Gold *Oct 2024 – Oct 2024*

- During this journey I contributed in the development of the website for Go For Gold, ICPC Bootcamp. This was an amazing journey, we developed this website using React JS and Tailwind CSS for the learners across the globe to become a part of this bootcamp.

Dory *Oct 2024 – Present*

- Built a high-performance Golang-based RAG backend enabling students to query PDFs and notes using semantic search, vector databases, and LLMs, featuring secure multi-tenancy, concurrent ingestion, event detection, and production-ready cloud deployment. Applied core computer science concepts such as Hash Maps for metadata caching to optimize user session lookups, Arrays & Slices for vector representation and cosine similarity calculations in semantic search, Trees for recursive document chunking preserving context, and Concurrent Queues with Goroutines and Channels to implement a worker pool ensuring scalable and crash-resistant PDF processing under high concurrency.
- Applied strong problem-solving skills to independently identify, analyze, and resolve technical bottlenecks in backend systems, improving query accuracy and system reliability for student-facing learning tools.

Movie Recommendation System *Dec 2025 – Dec 2025*

- Developed a Netflix-style recommendation system using Python ML, vectorization, and cosine similarity to generate personalized movie suggestions, exposing the model via FastAPI and integrating it into a SwiftUI-based mobile application.

Dory Swift Application *01/2023*

- Developed a SwiftUI app featuring a modern Glassmorphism UI and smooth animations, delivering a polished, real-time chat interface for AI-powered querying of PDFs and notes. Integrated seamlessly with a high-performance Golang RAG backend that supports semantic search using vector databases and LLMs. Engineered secure multi-tenancy, concurrent PDF ingestion, and event-driven processing to ensure scalability and reliability. Applied advanced computer science concepts including hash maps for caching, vector operations for semantic similarity, tree-based recursive document chunking, and goroutine-based worker pools to optimize concurrency and system performance under heavy load.

Languages

Hindi (Mother Tongue), English (Fluent)