

venu madhav m

+91 8088376693 madhav1152005@gmail.com

[in](#) VenuMadhav [G](#) VMadhav007 [LeetCode](#): VenuMadhav

Bangalore, Karnataka - 560085, India

EXPERIENCE

- Centre for Innovation and Entrepreneurship (CIE)** Bangalore, India
Summer Intern | GenAI and RAG Systems June 2025 – July 2025
 - Worked on **CIE-GPT**, a GenAI-powered course companion using **RAG**.
 - Built a **microservices-oriented, Dockerized RAG pipeline** using **LlamaIndex** and **Qdrant/FAISS**.
 - Implemented **Kafka-based asynchronous processing** with real-time chat via **WebSockets** and **Redis**.
- Undergraduate Teaching Assistant | C Programming Lab** Bangalore, India
Department of Computer Science and Engineering Feb 2025 – Present
 - Assisted **100+ students** with debugging, code optimization, and lab evaluation in collaboration with faculty.
- Research et al & WEAL, PES University** Bangalore, India
Technical Member | Hackathon & Ideathon Clubs Aug 2024 – Present
 - Mentored teams during hackathons across **full-stack, AI/ML, GenAI**, and healthcare domains.

EDUCATION

- PES University - RR Campus** Sep 2023 – Jul 2027
B.Tech in Computer Science and Engineering | CGPA: 9.04 | 5x CNR Scholarship Bangalore, India
- Nandi International School** Jun 2021 – Mar 2023
Senior High School | 95% | JEE: 96.8%ile | KCET Rank: 1693 Ballari, India

PROJECTS

- Priva-Fed : Privacy-Preserving Federated Search System** [G](#) Mar 2025 – Present
AI & Retrieval-Augmented Generation (RAG) Research
 - Built a system that lets **multiple organizations search each other's data without exposing sensitive content**, using a **federated RAG pipeline** with **FAISS**, **BM25**, and **cross-encoder reranking**.
 - Implemented **4 privacy layers** embedding noise (**Differential Privacy**), score encryption (**Homomorphic Encryption / CKKS**), binary hashing (**LSH**), and **secure aggregation** preserving **94% retrieval accuracy** while fully hiding individual scores.
 - Tested defenses against **4 real-world attacks** (membership inference, score leakage, embedding reconstruction, query fingerprinting); all score-based attacks dropped to **random-guess accuracy**, validating the privacy guarantees.
- NYAK (Not Yet Another Kafka) – Distributed Message Broker with AI Inference** [G](#) Dec 2025
Python, Redis, Flask, Transformers (Hugging Face), PyTorch
 - Built a **leader-follower message broker** with **Redis-based leader election** and **WAL persistence**.
 - Implemented **synchronous replication** with offset tracking between broker nodes.
 - Added **Bloom filter deduplication** for O(1) duplicate message detection.
 - Integrated an **AI consumer** using pre-trained Transformer models for sentiment analysis.
 - Enabled **runtime model switching** via Redis without consumer restarts.

SKILLS

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

Web Tech: React, Node.js, Express, HTML, CSS, Tailwind

Databases: MySQL, MongoDB, MongoDB Atlas, FAISS, Qdrant, ChromaDB, Redis, Neo-4j

Domains: Full Stack Development, RAG Systems, GenAI, systems and bigdata

CERTIFICATIONS

- Internship – CIE** [[View Certificate](#)]
- Full Stack Web Development – Udemy** [[View Certificate](#)]
- Containerisation 101(docker) – Alcoding** [[View Certificate](#)]

LANGUAGES

- English (Fluent), Hindi (Fluent), Telugu (Native), Kannada (Proficient)