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EDUCATION

PES University, Bengaluru

2027

Bachelor of Technology - **Computer Science and Engineering**

Prof. CNR Rao **Scholarship** (40% Tuition Merit Award), **3× Distinction Award**

SKILLS

Languages: Python, C, JavaScript, SQL

Frameworks & Libraries: FastAPI, PyTorch, Three.js, Pandas, NumPy, Pydantic, Scikit-learn, TensorFlow

Tools & Platforms: Git, GitHub, Docker, Kubernetes, AWS Bedrock, Agno, Blender, Vercel, Render

Concepts: Multi-agent AI systems, LLM-based reasoning, REST API design, speech recognition (ASR), NLP, WebGL

EXPERIENCE

Intern – Technology

2026

Acenet Consulting

Python · AWS Bedrock · FastAPI · Uvicorn · Pandas · NumPy · Pydantic

- Designed and developed a **multi-agent** AI-powered Virtual CFO platform using Python, FastAPI, and AWS Bedrock to deliver macroeconomic, industry, and automotive market intelligence.
- Built **automated data ingestion, cleaning, and historical analytics pipelines**; integrated LLM-based reasoning agents for executive insights; implemented intelligent query routing across specialized domains.
- Developed **REST APIs**, scenario analysis, and **confidence scoring** with automated reporting, optimizing data processing workflows to support data-driven business decisions.

AI App Development Intern

2025

xForm Solutions

Python · PyTorch · NumPy · BERT

- Built a **multilingual speech understanding system** (Whisper + NLLB-200 + SBERT) achieving **sub-0.07 Character Error Rate (CER)** on English benchmark speech with semantic consistency across Hindi/Tamil code-mixed inputs.
- Conducted systematic **WER/CER evaluation** on the Google FLEURS dataset, optimizing the preprocessing pipeline to improve non-English transcription accuracy.
- Engineered **rule-based urgency** and post-processing to improve precision in **noisy speech environments**.

PROJECTS

pRAGma - RAG Application with React

github.com/dhruvm-04/pRAGma

Python · FastAPI · React (Vite) · Prompt Engineering · FastEmbed · Groq API

- Built a **full-stack RAG application** that lets users upload text PDFs and ask grounded questions, with ingestion for **parsing, chunking, and local embedding generation**.
- Implemented **cosine-similarity retrieval** that exposes **retrieved chunks, similarity scores, source snippets**, latency, and token usage for **transparent, explainable** answers.
- Added multiple **query-execution strategies: Direct, Multi Query, RAG Fusion, Decomposition, Step Back, and HyDE**; with a UI that **visualizes each mode's execution pipeline** and retrieval steps.

EchoLang - Real-Time Multilingual Speech Translator

github.com/dhruvm-04/EchoLang

Python · FastAPI · Groq · Whisper · Llama 3.1 · Prompt Engineering · Render

- Built a **FastAPI** app for **multilingual service-request triage** in Hindi, Tamil, and English using **Groq Whisper** for speech-to-text and a **prompt-driven** Groq LLM for **translation, intent classification, and urgency detection**.
- Supports **multiple input modes**, including **typed text** and **audio uploads/recordings**, with **STT** applied before the analysis pipeline runs. Hosted on Render.

MusiConvert - Secure Peer-to-Peer Playlist Sharing Platform

github.com/dhruvm-04/MusiConvert

Python · Socket Programming · Fernet Encryption · Multithreading

- Implemented a **custom Selective Repeat ARQ protocol** from scratch over **raw UDP sockets** - per-packet **sequencing, sliding windows**, threaded **retransmission timers**, and cumulative **ACKs** - to reliably transfer playlists directly between peers on a local network.
- Designed a fuzzy-matching engine that scores candidate tracks using weighted title/artist string similarity plus a duration-tolerance check, so mismatched metadata across platforms **doesn't produce false matches**.

SocialMediaPlatform - Minimal Social Media Setup

github.com/dhruvm-04/SocialMediaPlatform

Python · Django · MySQL · (HTML/CSS) · SQL

- Built a full-stack social media platform with Django and MySQL supporting **authentication, posts, comments, likes, and a symmetric friendship model**.
- Enforced **data integrity** with check/unique constraints and Django-level permission checks, and **wrote MySQL triggers, stored procedures, and a stored function** (mutual-friends lookup, friend-count, personalized feed generation) to move core **relational logic** into the **database layer**.

CERTIFICATIONS

[Link](#)

- **Google** IT Automation with Python - Jun 2023
- **AWS** Prompt Engineering Foundation - Mar 2025
- **IBM** Fundamentals of AI - Jan 2025

EXTRACURRICULARS

- **Taught 3D modeling and game-ready asset creation** to ~50 students as **Blender Workshop Instructor**, PES University.
- **Led chassis design and fabrication** for the automotive club **Team Vegavath** using Blender and Fusion360.
- Served as **Under Secretary General** and led the Design team for PES University's **Model United Nations society MUNSoc PESUECC**.
- **Led the Design team** for **Maaya 2025**, PES University's **annual techno-cultural fest**.