Suchir M Velpanur

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EDUCATION

- **PES University** — Nov. 2022 - Present
  BTech - Computer Science And Engineering — **GPA : 9.1/10.0**
  Relevant Courses : Data Structures & Algorithms, OOP With C++, Web Technologies, Statistics, Computer Networks, Operating Systems, Linear Algebra, Database Management Systems, Machine Learning, Augmented & Virtual Reality, Graph Theory, Cloud Computing, Generative AI
  Awards : 5 x Prof. CNR Rao Scholarship (Top 5%), 1 x Prof. MRD Scholarship (Top 10%)
- **Venkat International Public School** — Jun. 2020 - Jul. 2022
  CBSE 12th Board Exam — **GPA : 9.58/10.0**
- **Venkat International Public School** — May. 2019 - Mar. 2020
  CBSE 10th Board Exam — **GPA : 9.74/10.0**

SKILLS

- **Languages :** Java, C++, C, Python, R, Go, JavaScript, HTML, Tailwind CSS, BootStrap, React.js , Next.js, Express.js, Node.js, Shell Scripting
- **Databases :** MySQL, PostgresSQL, MongoDB, ScyllaDB
- **Frameworks :** MERN Stack, Bootstrap, Flutter, Firebase, PyTorch, TensorFlow, Docker, Kubernetes
- **Tools and IDEs :** Git, VS Code, Vim, Google Cloud, AWS, Kaggle, Google Colab, Spring Tool Suite, Postman, Cisco Packet Tracer, Anaconda, Arduino IDE
- **Non Technical Skills** : Goal Setting, Change Management, Innovation & Creativity, Presentation Skills, Strategic Thinking, Sharpening Business Acumen

WORK EXPERIENCE

- **Project Intern at Hewlett Packard Enterprise (HPE)** — Jan. 2025 - Present
  Developed an AI-driven LLM agent framework for automated issue diagnosis in a simple simulated storage system using contextual log analysis & root cause analysis
  Built a Python-based REST API simulator with real time metrics tracking (latency, capacity, saturation) and optional UI for system visualization.
- **Research Intern at Centre For Information Security, Forensics and Cyber Resilience, PES University** — Jun. 2024 - Aug 2024
  Worked on various applications of AI/ML For Cyber Security in domains such as Digital Forensics, Malware Detection, DDoS Mitigation etc.
  Worked on a research paper for studying the use of LLMs for Log Analysis and performance comparisons with LSTMs and Transformers
- **Backend Engineering Intern at Dyashin Technosoft Pvt Ltd.** — Jun. 2024 - Jul. 2024
  Developed a Banking Database Management System using Java Spring Boot
  Used Postman to test API based on HTTP requests
  Used AWS EC2 instances to deploy the website

PROJECTS

- **OptimaSQL** : Built an SQL query optimiser that evaluates and visualises alternative execution plans for performance comparison using TPC-H benchmark data.
  Tech used : Flask, React, PostgreSQL, TPC-H dataset, Poetry, Node.js
- **DiagnoSys Bot :** Developed an intelligent assistant agent using LLMs to identify and debug issues in a simple storage system architecture, aiming to enhance system reliability and reduce downtime through automated root cause analysis.
  Tech used : LangChain, LangGraph, Streamlit, REST APIs, Flask, ChromaDB, PyPDF, Pandas, Requests
- **Multi Agent Music Generation Framework from VAD Scores :** Developed a multimodal framework that analyzes both audio and facial imagery to detect emotional states via Valence, Arousal & Dominance (VAD) scores, & recommends music aligned with the user's emotional context. The system bypasses transcription by extracting VAD signals directly from raw inputs and uses emotion-to-music mappings for personalized recommendations.
  Tech used : PyTorch, TensorFlow, Transformers, Librosa, Audiocraft, ChromaDB, Streamlit, SpeechRecognition, Pydub Google Generative AI, NumPy
- **TrafficSync** : Developed a real-time 3D traffic simulation that adapts congestion control based on real-time Google Maps data and dynamically adjusting vehicle flow at a busy Bangalore intersection
  Tech used : Three.js, Node.js, Google Maps API, JavaScript, Vercel
- **EduStream** : Implemented an Azure-hosted e-learning platform utilizing Azure App Services and Azure PostgreSQL, designed for easy course uploads and seamless topic discovery for learners.
  Tech used : Next.js, Tailwind CSS, PostgreSQL, Django, Azure App Services
- **PseudoKube** : Simulated a lightweight Kubernetes-like cluster orchestration framework with pod scheduling using scheduling algorithms (First Fit, Best Fit, Worst Fit), node health monitoring via heartbeats, and dynamic pod rescheduling for failure recovery
  Tech used: Python, FastAPI, Docker, Shell Scripting, Node.js, Git, Unix CLI, Scheduling Algorithms

ACCOMPLISHMENTS

- Qualified as a **National Semi Finalist** in **Flipkart Grid 7.0**, ranking among the **top 10%** of participants **nationwide**
- Won the **Raffle Prize** in the **IBM Z Datathon 2024** among **466 teams** in the Sustainable Development Track
- Received an **Honourable Mention** as the Delegate of Russia in the Continuous Crisis Committee at the People's Conference '23
- Stood **7th out of 40 teams** in the EPOCH Datathon hosted by the AI/ML Club of our University
- Stood **7th out of 52 teams** in a CTF hosted by the Cyber Security club of our University
- Ranked **Top 9 out of 27 teams** in the **Multilingual Loan Advisory Track** at The Great Bengaluru Hackathon, a national level hackathon

VOLUNTEERING ACTIVITIES

- Hosted a Competitive Coding Contest, AlgoMania, for all CSE students of the University
- Mentored participants in Inquisitio, a research paper writing contest
- Part of the team hosting Kodikon 2.0, a nationwide hackathon