SARAN DHARSHAN SP

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Education

B.Tech in Computer Science and Engineering (Artificial Intelligence)	**CGPA: 8.2**
Amrita School of AI, Amrita Vishwa Vidyapeetham, Coimbatore	*2022 - Expected 2026*

Work Experience

Amrita School of AI - Faridabad	**September 2024 - December 2024**
Elite AI Research Assistant (Remote)	*Coimbatore, Tamil Nadu*

- Developed an AI-driven query management system using embeddings and topic clustering for FAQ generation, employing a dissimilarity metric and Retrieval-Augmented Generation (RAG) to ensure real-time accuracy, achieving an **88.65% answer relevancy score** and **88.25% contextual precision.**

Projects

TaxEase: Personal Tax Filling Agent | *Google Cloud, Vertex AI, Cloud Bucket Storage, NextJS*   **Video** | **Github**

- Implemented an AI assistant for US tax filing using Vertex AI and Google Cloud, enabling users to fill income tax forms **200% faster**.
- Constructed interactive Q&A and direct form-filling features with **Gemini-1.5 Pro** for real-time guidance, deductions, and error prevention.

Ayumaton | *Python, Finetuning, OpenAI, LangChain, HuggingFace, Generative AI*   **HuggingFace** | **Github**

- Developed the **1st** LLM bridging ancient Ayurvedic knowledge with modern AI.
- Utilized a specialized Ayurvedic dataset and LoRA methodology to fine-tune the Llama-7b model, leading to a **20%** improvement in model accuracy with BLEU-1 score of **0.116** and BLEU-2 score of **0.052**.

NeuroScribe | *Computer Vision, Deep Learning, OpenBCI, VMD, CNC Plotter*   **Github**

- Engineered a **novel** BCI-controlled robotic handwriting system for individuals with limited motor function, using EEG signals and machine learning, to predict alphabets.
- Built **signal processing and deep learning models and techniques** for real-time letter classification, enhancing communication for users with motor impairments with the highest accuaracy of **80%** with SVM.

Publications

S.P. Saran Dharshan, K.L. Amritha Nandini, Sanjay Kumar K.J, Sowmya V, and Tharindu Bandaragoda, Automated Crack Analysis and Reporting in Civil Infrastructure using Generative AI in Proceedings of the **50th Annual Conference of the IEEE Industrial Electronics Society (IECON - 2024), Chicago, United States of America.**   **Video** | **Github**

Kamal Bijlani, Shreya Sunil, Navabarathi Asokan, Saran Dharshan SP, Vigneshwar Elangovan, Aadharsh Aadhithya , Real-Time Query Management for Large Scale Online Classes in Proceedings of the **14th International Advanced Computing Conference (IACC - 2024), Bali, Indonesia.**   **Paper**

Achievements

- Finished off the **Amazon ML Challenge 2024** with **AIR 43 out of 22k+ Teams** (Top 0.2%) teams Nationwide.
- Won **6th place** in the IEEE IES Gen AI Challenge for the Crack Genius Project and was invited to present our work to the **IECON's 50th Conference in Chicago, in November 2024** where more than **2000+ teams** participated Worldwide.
- **Finalist** in Meta Llama AI Hackathon and **MLH - PEC Hacks** out of **500+ teams**, **800+ teams** respectively.

Technical Skills

Areas of Interest: AI/ML applications, Backend Development, Research and Development, Generative AI

Languages: C, C++, Java, Python, HTML, CSS, JavaScript, SQL (MySQL, PostgreSQL), NoSQL (MongoDB)

Frameworks: Flask, Django, FastAPI, NodeJs, ExpressJS, Scikit-Learn, NLTK, OpenCV, Langchain, Neo4j, Scipy

Tools & Technologies: Git, GitHub, Docker, GCP, AWS, HuggingFace, GitHub Actions, Postman, Hoppscotch, Beekeeper

Positions of Responsibility

- **Campus Ambassador**	Cisco	**October 2024 - Present**
- **Chairman**	IETE Amrita Chapter	**August 2024 - Present**
- **Public Relations : Co-Head**	Anokha Techfest	**December 2023 - November 2024**

Certificates

- **Machine Learning Specialization**	*Stanford University* 🔗	May 2024
- **Associate Data Scientist with Python**	*Datacamp* 🔗	November 2023
- **Generative AI with Large Language Models**	*DeepLearning.AI* 🔗	December 2023