MADHAV M

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Summary

Computer Science & Engineering graduate specializing in AI/ML with 3 research publications (IEEE, NAACL, Springer) and experience in software development and developing AI applications. Proficient in Java, Python, and Machine Learning.

Education

Bachelor of Technology in Computer Science and Engineering (Artificial Intelligence)　　　**2022 − 2026 (Expected)**
Amrita Vishwa Vidyapeetham　　　*Coimbatore, Tamilnadu*
CGPA: **8.87** (Till 6th Semester)

Senior Secondary (12th Grade) & Secondary (10th Grade)　　　**2019 − 2022**
Sri Vageesha Vidhyashram Senior Secondary School　　　*Trichy, Tamilnadu*
12th Percentage: **88.2%** | 10th Percentage: **96.6%** (School Rank 1)

Key Strengths

- Data Structures and Algorithms
- Object-Oriented Programming (OOP)
- Machine Learning
- Deep Learning
- Database Management Systems
- Natural Language Processing
- Operating System
- System Design

Projects

Aware - Real-Time Speech-Based Scene Captioning System | *GitHub* | *Published in Springer*　　　**March 2025**

- Engineered a real-time AI system to narrate visual scenes via speech for visually impaired users, maintaining latency under 300ms.
- Achieved 90.36% accuracy in speech-to-text using a custom-trained Multilayer Perceptron model.
- Adapted OpenAI CLIP via fine-tuning on 330K+ COCO images to improve object classification and scene understanding.
- Generated contextual captions with GPT-2 Transformer and synthesized natural audio feedback using Tacotron 2.
- Tech Stack: Python, PyTorch, CLIP, Transformers, COCO, Tacotron 2, OpenCV, Multi-layer Perceptron

HireSmart+ | *GitHub*　　　**December 2024**

- Developed an AI-powered Resume Matcher that parses resumes, extracts skills using NLP, and ranks candidates by job-fit scores, reducing manual screening time.
- Implemented a resume parsing feature using pdfplumber to extract critical data from over 80+ PDF resumes. Employed regex techniques for accurate retrieval of names, emails, phone numbers, and skills.
- Applied techniques like TF-IDF Vectorizer and Cosine Similarity (0–1 scale) to compare candidate skills with job requirements and rank resumes based on relevance.
- Tech Stack: React.js, FastAPI, Scikit-learn, Tailwind CSS.

EvaluGATE | *GitHub*　　　**June 2024**

- Built a web-based quiz platform with real-time scoring, time-bound exams, and user authentication.
- Integrated Gemini 1.5 Flash model API to auto-tag questions with topics, enabling topic-wise performance analysis.
- Tech Stack: React.js, Gemini AI API, CSS

Publications

- **EEG-Driven Real World Image Captioning for Visually Impaired**
  - IEEE International Conference on Communication and Signal Processing, 2025

- **Cyber Protectors@DravidianLangTech 2025: Abusive Tamil and Malayalam Text Targeting Women on Social Media using FastText**
  - NAACL 2025 (DravidianLangTech Shared Task)

- **Speech-Based Real-World Scene Understanding for Assistive Care of the Visually Impaired**
  - Book Chapter in "Medical and Healthcare Applications," Springer 2025

Technical Skills

Languages: Java, Python, C++, C, HTML, CSS JavaScript, TypeScript, MATLAB, SQL

Frameworks & Libraries: React.js, FastAPI, Firebase, PyTorch, TensorFlow, scikit-learn, NLTK, OpenCV, NumPy, Pandas, Matplotlib

Tools & Platforms: Git, GitHub, VS Code, IntelliJ, Eclipse, Google Colab, Figma

Databases: PostgreSQL, MongoDB

Extracurricular Activities

Secretary　　　**July 2024 − Present**
Raagasudha Club　　　*Amrita Vishwa Vidyapeetham*

- Elected Secretary of Amrita's Official Music Club, Raagasudha, with over 50+ members. Assisted in coordinating, planning, and executing 12+ events.

Graphic Designer　　　**October 2022 − Present**
YouTube (Freelancer)　　　*Coimbatore, Tamilnadu*

- Designed Thumbnails have garnered over 15 Million viewers cumulatively, contributing to a 6x subscribers growth from 100K to 600K+.