

Harini T

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EDUCATION

Coimbatore Institute of Technology

MSc Data Science (Integrated)

July 2023 – Present

CGPA: 7.75/10 (up to 4th semester)

Sri Saraswathi Vidhya Mandhir, Karur

Higher Secondary Certificate

June 2022 - May 2023

Percentage: 89.8%

PROJECTS

Crime Report Simplifier

Tools: Python| Flask| NLTK| Tesseract OCR| Sklearn| gTTS| HTML| CSS

- Built an AI-powered Crime Report Classification System that predicts crime-type with 81.58% accuracy and crime-severity with 58.77% accuracy using Random Forest + TF-IDF NLP features trained on 1,000+ labeled FIR samples.
- Integrated OCR + NLP pipelines to automatically extract text from PDF/Image FIRs and simplify legal narratives, improving readability score from 30 to 68 and reducing content complexity by 70% while preserving key legal details.
- Designed a Flask-based interactive interface for FIR upload, language selection, crime insights, and IPC-related explanations, enabling faster analysis and improved accessibility for non-technical users.

Neural Code-Mixed Language Generation

Tools: React| Flask| Python| Whisper| PyTorch| MoviePy| gTTS

- Developed a multilingual speech–text–video translation system using Whisper STT and deep-learning NLP pipelines for transcription, translation, and speech synthesis.
- Implemented a full-stack architecture using PyTorch deep-learning models, MoviePy-based media extraction, and a real-time multilingual chatbot/translator module.
- Optimized model performance with GPU-based processing, text normalization, and speech enhancement to improve translation accuracy and fluency.

Smart Health AI - AI-Based Adaptive Heart Disease Prediction System

Tools: Python | Flask | React | Sklearn | Random Forest | SHAP | SQLite

- Trained a Random Forest Classifier on 1,000+ patient records and achieved 97.67% accuracy, 0.98 F1-score, 0.98 precision, and 0.98 recall, with a confusion matrix showing 132 correct negatives and 119 correct positives out of 257 total cases.
- Developed a full-stack prediction system where the React frontend sends user inputs to a Flask REST API, reducing prediction time to <200 ms and ensuring 100% successful API responses during testing.
- Designed and integrated an SQLite database using SQLAlchemy to manage 250+ prediction logs and 1,000+ input records, ensuring 0% data loss with structured ORM-based storage.

TECHNICAL SKILLS

Programming Languages

Python, SQL

Web Development & Frameworks

HTML, CSS, Flask

Databases

MySQL, MongoDB

Tools and Libraries

MS Excel , NumPy, Pandas

Soft Skills

Adaptability, Teamwork, Time Management

Area Of Interest

Web Development , Data Structures & Algorithms , Machine Learning , Database Management

CO-CURRICULAR ACTIVITIES AND CERTIFICATIONS

- **Melinia Hackathon 2024** – Coimbatore Institute of Technology (CIT) – Selected for Round 2
- **Triathlon Hackathon 2024** – PSG Axios – Participated in Data Science Problem Solving
- **Oblivion25 – 30 Hours AI/ML National Hackathon** – Participated (2025)
- **NPTEL – Database Management Systems (2025)**
- **CodSoft Python Development Internship (2024)**