MADHUMITHA SESHAIAH

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EDUCATION

RMK College of Engineering and Technology GPA- 8.69/10 (Until 6th Semester)   **Tamil Nadu, India**
Pursuing: B.E Computer Science & Engineering   August 2021- May 2025

TECHNICAL SKILLS

Languages/Libraries/Tools: C, Java, Python, HTML, CSS, JavaScript, Node.js, React, MongoDB, PHP, SQL, Django, Flask, Streamlit, CNN, RNN, Tensorflow, Keras, Scikit-learn, pandas, Numpy, MobileNet, UI-Figma, Unity.

WORK EXPERIENCES

Software Engineer Intern   **ISRO**   **Incoming Jan 2024**
- To develop projects on pioneering space technology projects

Data Analyst and Developer   **Freelancing**   **Aug 2024 - Oct 2024**
- Developed an e-commerce website for an online bakery store using Node.js and React.
- Implemented a seamless database for managing order details and integrated a secure Indian payment gateway with API keys to ensure safe transactions and a user-friendly checkout process, automating manual orders for enhanced operational efficiency.
- Analyzed historical sales data and implemented time series forecasting algorithms, resulting in accurate predictions of customer demand trends that improved inventory management efficiency by 30%.

Software Engineer Intern   **Idexcel Pvt Ltd**   **June 2024 - Aug 2024**
- Created a robust recommendation engine for analyzing market images, providing product suggestions based on consumer preferences; and generating over 150 precise recommendations per minute.
- Implemented visual cosine similarity algorithms to analyze product images, achieving highly accurate recommendations that increased user engagement by 30% and enhanced relevance in customer shopping experience.
- Integrated the engine with the front-end interface, improving the overall interface design.

Research Intern   **RMK College of Engineering and Technology**   **Oct 2023 - March 2024**
- Applied CNN and RNN architectures on an image dataset to identify the highest accuracy rate on the deep learning models.
- Achieved a 92.8% accuracy and an ROC-AUC score of 97.2% in CNN by training using ResNet and data augmentation.
Accelerated model training and inference using TensorFlow with GPU, significantly reducing processing time by 30%.

Software Intern   **Vision Isoftech Private Ltd**   **June 2023 - Aug 2023**
- Applied K-means clustering technique to group similar customer purchase data to enable distinct customer segmentation.
- Analyzed large datasets containing over 50,000 data points to identify key trends in customer behavior.
- Utilized feature scaling methods to improve convergence, reducing the algorithm's training time by 25% and optimizing performance.

ACADEMIC PROJECTS

Application for government housing schemes and monitoring of work progress.   **March 2023**
- Designed an application to manage and track the government housing scheme's work progress, creating a multi-login webpage with an active dashboard including real-time work updates and work completion prediction using linear regression.
- **Tech Stack:** Frontend: HTML, CSS, JavaScript**;** Backend: Php, Mysql **;** ML: Linear regression, python libraries
- **Achievements**: Glance Village Inter-College hackathon - The only software team from our college to be shortlisted for the top 10 out of 8000+ entries.

Developed an Image Forgery Detection application using MobileNet.   **Feb 2024**
- Created a model that classifies real and fake images of humans by implementing MobileNet and Python libraries for preprocessing, model training, and testing, followed by performance evaluation with classification reports.
- **Tech Stack**: Deep Learning: MobileNet, TensorFlow, Keras; Data Preprocessing: Python libraries (NumPy, OpenCV)
- **Achievements**: 98.58% accuracy in detecting fake images and reporting the best accuracy score on each prediction.

Real-time object detection using ESP32CAM and YOLO.   **April 2024**
- Captured Real-time video input from the ESP32CAM and applied the YOLO deep learning model for object detection, The application was optimized for embedded hardware allowing efficient detection of objects in live video streams.
- **Tech Stack**: Embedded Systems: ESP32CAM, Arduino; Computer Vision: YOLO; Programming: Python, OpenCV.
- **Achievements**: Won 3rd prize in Xenioz, a Three-level internal hackathon.

Developed a "Crime Tracker" application using machine learning.   **Oct 2024**
- Developed a web application that takes surveillance camera input to extract frames depicting crime-related activities, classified the type of crime and attributes of the person, and tracked suspicious individuals. Implemented re-identification across frames and stored only abnormal frames for efficient data management.
- **Tech Stack**: Deep Learning: 3D CNN, OpenPose, DeepSORT; Streaming and Storage: Apache Kafka, SQLite ;
Web Development: Django REST Framework, JavaScript, HTML, CSS.
- **Achievements**: Received appreciation for innovation and accuracy at the Smart India Hackathon.

AI-Based Disease Prediction System   **July 2023**
- Developed a Heart, Parkinson's, and Diabetes prediction system using a Support Vector Machine and Python libraries by taking user input and determining the potential presence of the disease.
- **Tech Stack**: Machine Learning: Scikit-Learn, SVM || Python libraries: Pandas, NumPy, Matplotlib. || Deployment: Streamlit
- **Achievements**: Optimized data preprocessing by handling missing values, grouping data, and evaluating model performance using accuracy scores.

TECHNICAL CONFERENCES AND SEMINARS

- Presented a paper on 'Use of Artificial Intelligence in Drip Irrigation System by measuring soil moisture of chili crop'' at the 10th National Conference on Computing Technologies Today's and Beyond (NCCTTB'23), and won the Best Presentation Award.
- Madhumitha Seshaiah, 'Identifying COVID-19 Presence Based on CT-Scan Images', IEEE Xplore, October 2024.
- Madhumitha Seshaiah 'Implementation of Multi-Format EXIF Metadata Extraction From Images' at International Conference on Data Computation and Communication (ICDCC)-2024, November 2024.
- Madhumitha Seshaiah 'Cloud Based Artificial Intelligence (AI) Smart Drip Irrigation System for Paddy Crop Cultivation in TamilNadu', 2nd International Conference on Artificial Intelligence, Computing Technologies, Internet of Things (IoT) and Data Analytics (AICTA-2024), November 2024.
- Participated in a 2-day DST-SERB, New Delhi sponsored National Level seminar on "Navigation the cloud security frontier: Unraveling the challenges in cloud computing"

FUNDING PROPOSAL

- Submitted a project proposal on " Image Forgery Detection application" to The Institution of Engineers, India.
- Submitted a project proposal on "Crime Tracker", a web application for Crime Detection and Monitoring to the Tamil Nadu State Council For Science and Technology.

COURSES AND CERTIFICATIONS

- "2023 Web Development Bootcamp" – Udemy.
- "Introduction to Artificial Intelligence (AI)" – IBM (Coursera).
- "Artificial Intelligence Primer Certification" – Infosys Springboard.
- 12-week Social Networking Analysis Course – NPTEL, Ministry of Education, Government of India.
- "Back-End Engineering Virtual Experience Program" – Lyft (Forage).
- "Mastering Figma: Beginner to Expert UI/UX Design" – Guvi.

CORPORATE CONTESTS AND HACKATHONS

- Participated in Google Kickstart 2022, conducted by Google.
- Shortlisted in the "TATA Imagination Challenge 2023," conducted by TATA.
- Shortlisted in Accenture Innovation Challenge 2023, conducted by Accenture.
- Shortlisted for EDII Hackathon, conducted by Tamil Nadu Government.
- Winner, Tech Hackathon, Xenioz'23, conducted by RMKCET.
- Participated in Smart India Hackathon 2023.
- Regional Finalist, ICT Academy Youth Talk – Tamil Nadu 2023.

MEMBERSHIPS AND RECOGNITIONS

- Student Secretary, Department of Computer Science and Engineering (2024-2025).
- Oracle Certified Associate 2023, Oracle University.
- Recognized as Top 10 Academic Performer (Academic Year 2023-2024).
- Highest League Score Department Topper at Skillrack Programming Platform.
- Achieved Gold League at Google Cloud with 8500 points and certifications.
- Active member of Talent Quest India(TQI) Ullas Trust, Active member of the Pakt for You Foundation.