THARUNRAJ SINGARAVELU

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ABOUT ME

I am a passionate and driven Data Science Master's student at the University of Limerick, Ireland, with a Bachelor's degree in Computer Science and Engineering from SRM IST, Chennai. I have a solid foundation in data science, artificial intelligence, and machine learning, along with hands-on experience in developing innovative solutions to complex problems. I thrive in transforming data into actionable insights and enjoy designing intuitive solutions that bridge technology and real-world challenges.

KEY COMPETENCIES

- Machine Learning and AI model development
- Data analysis and statistical modeling
- Deep learning with CNNs and LSTMs
- Python and R programming
- Data visualization and report writingProblem-solving and critical thinking
- Project management and collaboration
- Strong communication and presentation skills

PROFESSIONAL EXPERIENCE

NSIC, Chennai **Jan 2023**
Machine Learning with Python - Internship and Training

- Completed a comprehensive internship and training on Python for Machine Learning.
- Gained hands-on experience in implementing various ML algorithms and techniques.

Coincent.ai & Languify (Online) **Oct 2022 - Dec 2022**
AI with Python - Internship Training

- Built a Convolutional Neural Network (CNN) model to identify and classify clothing and footwear items.
- Enhanced model accuracy by experimenting with different architectures and hyperparameters.
- Gained practical exposure to AI model development and deployment.
- Passed Microsoft Azure AI900 Examination

EDUCATION

Bachelor of Technology **2020-2024**
Computer Science and Engineering
SRM Institute of Science and Technology, Ramapuram

Masters **2024-2025 (current)**
Data Science and Statistical Learning
University of Limerick, Ireland

IEEE PUBLICATION

NINTH INTERNATIONAL CONFERENCE ON BIOSIGNALS, IMAGES AND INSTRUMENTATION MAR 2023

Presented and won the Best Paper Award for the research paper titled "***Vision-Based Real-Time Active Protection System using Deep Convolutional Neural Network***" at the 9th ICBSII.

PROJECTS

HUMAN SPEECH BASED EMOTION RECOGNITION USING CNN & LSTM NETWORKS WITH DWT AND MFCC

FEB 2024 - March 2024

- Developed a Human Speech Emotion Recognition (HSER) model using novel preprocessing techniques and various deep learning model combinations.
- Achieved 99.82% accuracy with a ResNet18-LSTM model, significantly improving emotion detection performance.

RENAL FAILURE PREDICTION USING RANDOM FOREST AND DEEP CONVULUTONAL NEURAL NETWORK

SEP 2023 - NOV 2023

- Built a model capable of identifying Chronic Kidney Disease (CKD), kidney stones, cysts, and tumors using blood test data, health-related questions, and CT-scan images.
- Achieved 99% accuracy with Random Forest and 96% accuracy with YOLOv8 for image classification.

VISION-BASED ACTIVE PROTECTION SYSTEM

JAN 2023 - MAR 2023

- Designed an image processing system integrated with radar for the real-time protection of battlefield tanks, capable of precisely destroying threats.
- Achieved an F1-score of 93.10%, Average Precision of 89.50%, and Average Recall of 91.26% for the computer vision model

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CERTIFICATIONS

IBM Applied AI Specialization **JUNE 2023**
Coursera | IBM
Completed a six-course specialization covering key AI concepts and tools:

- Introduction to Artificial Intelligence (AI)
- Getting Started with AI using IBM Watson
- Building AI-Powered Chatbots Without Programming
- Python for Data Science, AI & Development
- Python Project for AI & Application Development
- Building AI Applications with Watson APIs

Supervised Machine Learning: Regression and Classification **FEB 2023**
Coursera | IBM

Core Python for Everyone **JAN 2023**
Udemy

Microsoft Certified: Azure AI Fundamentals (AI-900) **OCT 2023**
Achieved a score of 76.30%