Charan Selva Dhanush Ravi

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Career Objective

To make meaningful contributions to the advancement of Artificial Intelligence by developing interpretable models that explain complex relationships such as human behaviour.

Education

Central Board of Secondary Education   2020 – 2022
Maharishi Vidya mandir   Chennai, India
- Score: 371/500 - 74.2%

Computer Science (Artificial Intelligence and Machine Learning)   2022 – 2026
Chennai Institute Of Technology   Chennai, India
- CGPA: 8.09/10

Professional Experience

Research Intern (2 terms)   05/2024 – 05/2025
National Institute Of Technology Tiruchirappalli   Tiruchirappalli, India
Term I (05/2024 – 08/2024): Multimodal VQA.
Term II (01/2025 – 05/2025): Soil saturation automation and Virtual Surgery.
- Collaborated to integrate AI in civil, developed an automated system to control the degree of saturation in the soil. Created an application to monitor and access the system remotely.
- Developed an interface to extract tumor data through OCR and place the tumor in the appropriate place, size and orientation on the simulated body utilizing unity.

Research Intern   07/2024 – 09/2024
Universiti Tunku Abdul Rahman   Perak, Malaysia
- Conducted a comprehensive analysis of existing models and their performance metrics for stock market forecasting, identifying strengths, limitations, and trends.
- Authored a systematic review to extract key insights and highlight gaps in current algorithms and forecasting models, driving a deeper understanding of research opportunities in the field.
- Designed and developed a multimodal Transformer-based model to effectively predict and forecast stock market trends, leveraging attention mechanisms to enhance accuracy.

Undergraduate Researcher   10/2022 – present
Center For Additive Manufacturing   Chennai, India
- Analyzed additive manufacturing parameters, collected data, and studied their impact on material properties.
- Developed precise deep neural network models using advanced machine learning techniques to predict material behavior.

- Collaborated to integrate artificial intelligence into additive manufacturing, optimized processes, and contributed to cutting-edge research and patents.

Projects

Remote Sensing and Monitoring Soil Moisture
02/2025 – 05/2025
- Developed an interface and IoT-based system enabling interdisciplinary by controlling the soil moisture level to maintain the optimum moisture content in the soil to strength the base of a structure.
- Utilized ESP32 to sense the soil moisture level and connect it to a network to save the readings from the microcontroller to be processed and analyzed.

Water Supply and Demand Forecasting
10/2024 – 12/2024
- Engineered and trained two LSTM models to accurately forecast water demand and supply of an area. The models showed an accuracy of over 95%.
- Analyzed the historic supply and demand of water to identify key features influencing them. This helped in understanding seasonal trends, anomalies and critical factors influencing water resource management.
- Developed an intricate dashboard to display the relations between features and the output obtained by the model.

Visual Bot
05/2024 – 08/2024
- Developed a multimodal VQA transformer model to aid visually impaired individuals auditorily alternative to the existing methods such as cane and support dogs.
- Created a workflow between various models to extract data from the images and the questions to give accurate and highly relative answers.
- Implemented advanced transfer learning techniques such as ULMFiT to transfer the knowledge and fine tune the model.

Layer Height Monitoring
02/2023 – 05/2023
- Used various computer vision techniques to extract informations from the images extracted during the printing process to detect anomalies occured.
- Developed and fine tuned a hybrid model using PyTorch to predict the error produced by the additively manufactured part's images.
- Achievedover 90% accuracy during the real time application.

Publications

A Systematic Review of Stock Market Forecasting Utilizing Machine Learning and Deep Learning
2025
ICSGRC 2025
- Performed deep analysis on various Deep Learning and Machine learning Techniques on Stock Market Forecasting.
- Proposed an idea to utilize transformers and agent based learning to increase the profit margin of the model.

**PREDICTION OF COMPRESSIVE STRENGTH IN ADDITIVELY
FABRICATED PART USING LONG SHORT TERM MEMORY BASED
NEURAL NETWORK** 🔗   09/2023

Materials Today Communication

- Examined the influence of 3D printer parameters on compressive strength
  and devised metrics to quantify their impact more effectively.
- Developed and trained a deep neural architecture to predict the
  compressive strength with over 95% accuracy.

Skills

Tools
PyTorch,
HuggingFace,
OpenCV, matplotlib,
TensorFlow

Specializations
*Computer Vision,
Natural Language
Processing, Large
Languge Models*

**Programming
Languages**
Python, C, Java

Data Analysis
*NumPy, Pandas,
DBMS, Tableau*

Web Development
ReactJS, Flask

Certificates

Data Analysis
Google

Deep learning
Udacity

German A1
Goethe

Awards

Smart India Hackathon 2025
Finalist
20/12/2024