Internship Project Report

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Introduction

This report presents two AI-based real-time projects completed as part of my internship at Elevate Labs. The first project focuses on public health and safety through face mask detection, and the second explores financial forecasting using deep learning techniques with a user-friendly interface.

Abstract

The Face Mask Detection system utilizes computer vision to classify whether a person is wearing a mask. It provides real-time alerts using a webcam feed. The Stock Price Trend Prediction project applies LSTM-based neural networks to predict stock price trends based on historical data. It also integrates moving averages and RSI indicators for technical analysis and presents them through a Streamlit dashboard.

Tools Used

- Python, OpenCV, TensorFlow, Keras, Pandas, Matplotlib
- Scikit-learn, Streamlit, yfinance API
- Jupyter Notebook, Visual Studio Code

Steps Involved in Building the Projects

1. Face Mask Detection with Live Alert System:
   - Collected and preprocessed a face mask dataset
   - Trained a CNN model for binary classification
   - Integrated webcam feed for real-time detection
   - Triggered alert system on mask violations

2. Stock Price Trend Prediction with LSTM:
   - Fetched historical data using yfinance
   - Normalized data and built LSTM model using Keras
   - Trained and validated the model with past data
   - Plotted predictions vs actuals with RSI & MA indicators
   - Built and deployed a Streamlit dashboard for live use

Conclusion

Both projects helped me apply theoretical AI concepts to real-world problems. I gained hands-on experience in data preprocessing, model building, and web-based deployment. The internship at Elevate Labs significantly enhanced my practical knowledge in computer vision, deep learning, and interactive dashboards.