



SCHOOL OF EMERGING TECHNOLOGIES | MRCET

(CSE-DATA SCIENCE, CSE-IOT, CSE-CYBER SECURITY)

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IV Year B.Tech-II Semester Major Project Individual Summary Sheet

Project Title:	STOCK PRICE MOVEMENT DETECTION USING CANDLESTICK PATTERNS				
Project Code:	IOT/2020/MJP/12	Batch Size:	03	Batch:	2020-24
Domain / Area:	Machine Learning		SDG Mapping	8	
Abstract:	<p>Stock market forecasting is inherently challenging due to the noisy, nonparametric, and chaotic nature of stock price time series. Accurately predicting price movements is vital for maximizing investment returns. This research proposes employing a Convolutional Neural Network (CNN) model using TensorFlow and Keras to analyze candlestick chart data, capturing visual patterns that may elude human perception. Challenges such as limited data availability, the complexity of market data, overfitting, and short-term fluctuations must be addressed. However, leveraging CNNs offers promise in effectively predicting stock price directions.</p>				
Technical (S/w & H/w) Specifications			Module(s) Specifications		
<p>Software Specifications: Operating Systems: Windows or MAC Libraries: Pandas, Keras, Matplotlib, Tensorflow.</p> <p>Hardware Specifications: Processor: Intel i3 or more RAM: 4GB and Higher Harddisk: 500MB Minimum</p>			<ul style="list-style-type: none"> ● Data Retrieval Module ● Data Preprocessing Module ● Candlestick Pattern Recognition Module ● Integration with Trading Systems Module ● Backtesting and Simulation Module 		
Architecture Diagram			Methodology		
<pre> graph LR A[Online sources publishing stock price] --> D[Preprocessing Data] B[Online sources publishing financial news] --> D D --> C[Trained Model] D --> E[Classification/Prediction] D --> F[Stock Price] </pre>			<p>It involves preprocessing candlestick chart data, splitting into training and testing sets, and encoding directional labels. Then a convolutional neural network (CNN) architecture is designed and implemented using TensorFlow and Keras. The CNN model learns visual patterns from candlestick charts to predict stock price movement direction. To mitigate overfitting, techniques like dropout and batch normalization are employed. Model performance is evaluated using metrics such as accuracy and loss on the test set.</p>		
Existing System			Proposed System		
<ol style="list-style-type: none"> 1. Raw data is preprocessed to clean and transform it into a suitable format for analysis. 2. In this existing system there is stock price movement detection only by scatter plot, line plot, Histogram, heatmap, and confusion matrix. 			<ol style="list-style-type: none"> 1. The proposed system emphasizes the use of candlestick patterns and involves the application of CNN. 2. To identify and predict price movements in financial markets based on the analysis of candlestick. 		
Guide Details		Batch Members Details			
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