Deep Dive: Evaluating Multiple Deep Learning Approaches in Stock Market Prediction

Proposal for CSE4238 Soft Computing Lab
Group 2

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1 Objective

Assessing the effectiveness of different deep learning models, our goal is to use deep learning to predict stock market trends. We will collect and clean historical stock data, and then train different deep-learning models. By comparing their performance and fine-tuning their settings, we aim to identify the most effective model. We aim to create a reliable and robust stock market prediction system using a systematic approach, providing insights into the strengths and limitations of various deep learning techniques.

2 Methodology

2.0.1 Data Collection:

Collect historical stock market data for selected companies.
Preprocess and normalize data.

2.0.2 Feature Engineering:

Generate additional features like moving averages and sentiment scores.
Experiment with different time intervals.

2.0.3 Model Selection:

Choose some models like LSTM, CNN, GRU etc.

2.0.4 Training and Testing:

Split data into training and testing sets.
Experiment with various splits and use cross-validation.

2.0.5 Model Evaluation:

Assess performance using metrics like accuracy and precision.
Compare results with baseline models.

2.0.6 Temporal Analysis:

Investigate the impact of time intervals on predictions.
Evaluate models' ability to capture trends.

2.0.7 Documentation and Reporting:

Document the process and findings.
Provide clear and concise reporting.