Lab 10: Case Study

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Part 1: Select Presentation

Paper Presentation Chosen: Gold Price Forecasting by Rajesh Subedi

Part 2: Summary

The presentation looks at a deep learning model called TCN-QV that is used to forecast gold prices. It combines Temporal Convolutional Networks with a Query-Value attention mechanism so that it can capture both short-term fluctuations and long-term trends in the data. The model is trained on daily gold price data from Shanghai and ends up outperforming more traditional models like ARIMA, SARIMA, and even LSTM. It brings down the Mean Absolute Error by over 33 percent, which is a significant reduction. The model also uses residual connections and attention layers to improve interpretability and training stability. It is designed to be efficient, lightweight, and robust enough to handle noisy financial data, making it highly practical in real-world scenarios.

Part 3: Review / Questions

The presentation does a good job of explaining the model and how it fits into the bigger picture of financial forecasting. The comparison to models helped highlight what makes TCN QV special. I like the focus on the attention mechanism, since interpretability is such a big deal in finance. But I wish the presenter had shown an actual heatmap or some kind of visual for the attention weights instead of just describing it. Also, the slides mention an ablation study, but they do not explain which component (TCN, attention, or residual) adds the most value. A question I have is if this model performs just as well on other commodities like oil or crypto, or if it is optimized for gold specifically.