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Innovative Approaches to Asset Prediction: Combining Deep Learning with Financial Modelling

Final Report

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Abstract

This project addresses the increasing complexity and volatility in financial markets through the development of advanced analytical tools. Leveraging the theoretical foundations established by Bryan Kelly and Kusuma, we propose refining Convolutional Neural Networks (CNNs) to enhance the prediction of financial asset behaviors. Key aspects of this research include:

- Exploring asset co-movements within and across different markets to better understand inter-market dependencies.
- Establishing a methodological framework integrating CNN architectures with candlestick chart data for simultaneous analysis of multiple financial assets.
- Developing a predictive model aimed at improving decision-making for multi-asset investment strategies.

Anticipated outcomes include enhanced predictive accuracy and deeper insights into global financial market dynamics. This research sets the stage for a comprehensive study on the interconnected nature of modern financial markets.

Declaration of Originality

I hereby declare that the work presented in this thesis is my own unless otherwise stated. To the best of my knowledge the work is original and ideas developed in collaboration with others have been appropriately referenced.

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