Predicting Future Asset Returns with GCN and LSTM

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Abstract

Placeholder

1 Introduction

The problem of predicting future returns given historical data for tradable assets has been extensively studied with many approaches having been explored. Traditional methods used time-series models such as ARIMA and GARCH to predict future price movements. Similarly, deep-learning models that can take advantage of temporal relations such as Long Short-Term Memory (LSTM) models have been applied to this problem with promising results. However, these methods fail to take into account the propagation of information through the market and the correlations of assets. In this aspect, Graph Convolutional Networks (GCN) has demonstrated good performance in regression problems. Combining these should allow for the capture and use of both intra-asset temporal and cross-asset relations to provide superior prediction performance.

1.1 Related Works

1.2 Dataset

2 Methods

3 Results

4 Discussion

References

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A Appendix