

Phase 1 Project Selection Status Report

Name: Ian Tai

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Director of Studies: Sean Holden

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Project Area: Deep learning and Finance

Project Title: Using LSTMs to Predict Stock Markets

Outline:

The long-standing problem of predicting the stock market has traditionally been approached with simpler Neural Networks and Support Vector Regression, but the pattern-recognition abilities of Long-Short Term Memory networks have shown promise in this area.

I plan on using data with a time interval of around five minutes, and features should be a combination of changes in stock price and the result of sentiment analysis conducted on breaking news (over some time period with a drop-off in some relevance metric based on publish time, multiplied by a calculated importance heuristic) from Bloomberg. Time permitting, I also plan to apply wavelet transforms to de-noise the financial data.

Potential Supervisors: Pietro Lio, Sean Holden

Special Resources: Access to Computer Lab internal machines (GPU resources), Bloomberg terminal available in the Marshall library to be used for exporting stock data and statistics, use of personal computer