Research Plan Confirmation

**Student:**

Zhengxin Ye

**Title of Research Topic:**

Using Machine Learning Models and Techniques to Perform Stock Market Prediction

**Name of First Supervisor:**

Dr Thomas Heinis

**Name of Second Supervisor:**

Professor Walter Distaso

**Name of the Independent Assessor:**

**Short Abstract of the Research Topic:**

This project would entail three development/research stages:

1. Implementation of a software application/platform that perform financial forecasting using statistical learning methods, with a focus on data preprocessing techniques, current feature selection methods and current predictive models;

2. Adapt forecasting models to work with ticking data stream with a particular focus on tackling concept drifts embedded in financial time series data;

3. Design and implementation of an adaptive ensemble model that should possess better predictive power than contemporary methods and an ability to adapt to changing data features

**List of Key Literature Papers:**

Michael David Rechenthin, *Machine-learning classification techniques for the analysis and prediction of high-frequency stock*, 2014 PhD thesis, University of Iowa

Tristan Fletcher, *Machine Learning for Financial Market Prediction*, 2012 PhD thesis, UCL

Martin Victor Sewell, *Application of Machine Learning to Financial Time Series Analysis*, 2017 PhD thesis, UCL

Justin A. Sirignano, *Deep Learning for Limit Order Books*, November 2018 Quantitative Finance

**Signature of First Supervisor:**