

# Evaluation of Machine Learning in Empirical Asset Pricing

## Proposal

Ze Yu Zhong

Wednesday 17<sup>th</sup> April, 2019

---

### 1 Statement of Topic

### 2 Background Material

---

### 3 Outline of Aims

### 4 Research Plan

We first evaluate machine learning algorithms on a collection of simulated datasets which include cross sectionally correlated characteristics which enter the return equation in a range of linear and highly non-linear combinations.

#### 4.1 Models

##### 4.1.1 Linear Model

##### 4.1.2 Penalized Linear

##### 4.1.3 Random Forest

##### 4.1.4 Neural Networks

#### 4.2 Simulation

The machine learning algorithms will be tested on these 12 specifications and their performance evaluated.

#### 4.3 Real World Data

Finally, we evaluate machine learning algorithms on real world data.

### 5 Outline of Results Thus Far

Remember  
that this  
is meant  
to be no  
more than  
5 pages

includes  
motivation  
and brief  
review of  
key litera-  
ture