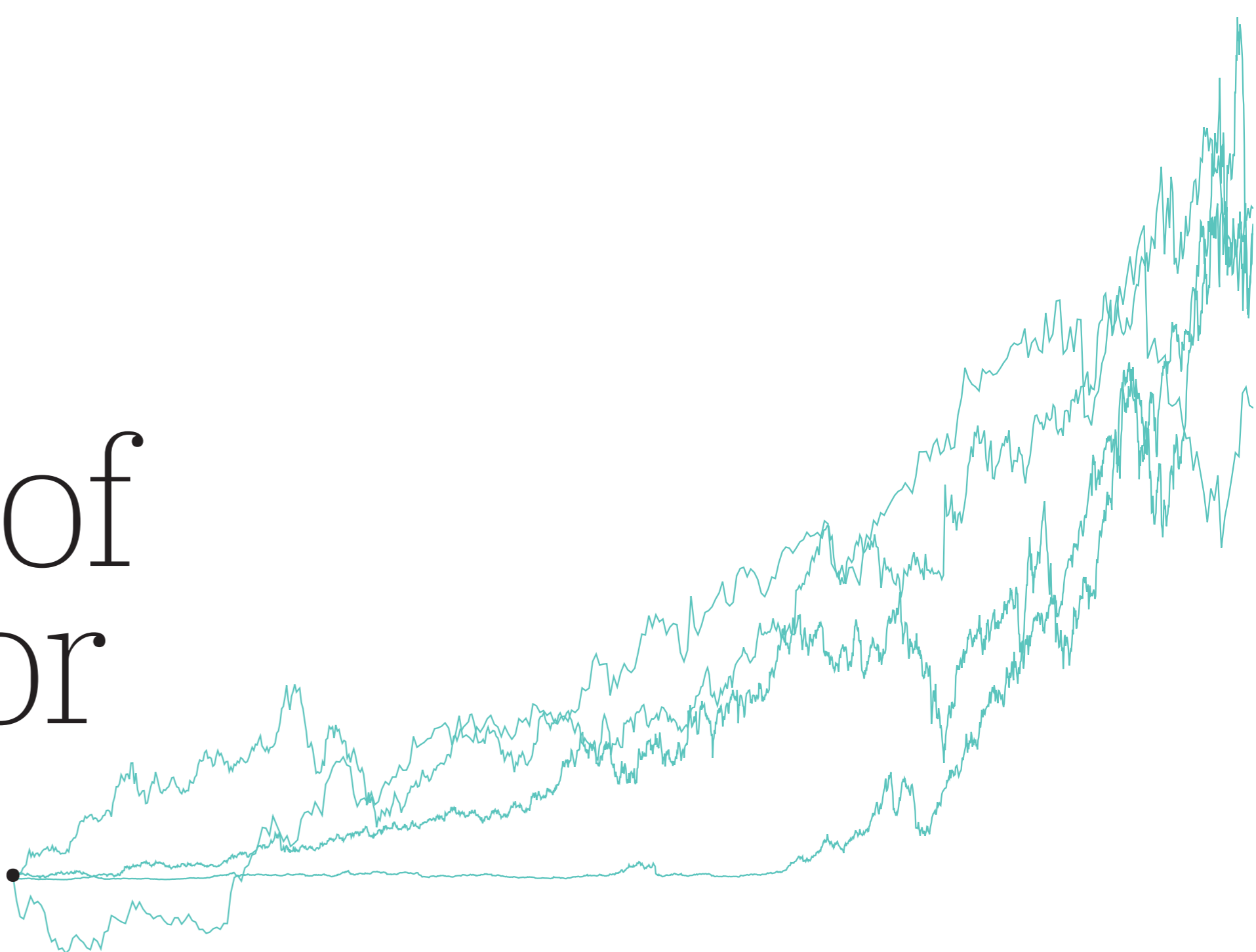**JAMES DALY** *supervised by* **DAVE CLIFF**

Online ML for the Sentiment Analysis of Social Interactions for Financial Prediction.

BIRBECK'S 2017 THESIS *Turning Tweets into Trades: Sentiment Analysis for Directional Stock Price Predictions* investigated the use of sentiment analysis on social media data to predict financial markets; more specifically, marking tweets containing a company's cashtag (such as $AAPL) with the subsequent change in that company's stock price and teaching a Bayesian classifier on this dataset to generate stock predictions. This method, in Birbeck's study, yielded a return rate of 5.18% over one month, or 83% per annum, far outperforming random chance and two tested baseline sentiment analysis methods.

WE FURTHER EXPLORE the ideas presented: reviewing her conclusions against a 2018/19 dataset; extending from cashtag mentions to company mentions to discover whether there is any effect or correlation that the wider public view of a company has on/with investor sentiment (and since few Twitter users, including investors, are aware of cashtags); and create and evaluate an 'online' continually learning classifier able to make 'live' trading decisions.

THE DATASET   as of 17th February 2019

7.3m	198k	1.5m
tweets	cashtags	mentions

APPLE, INC.	@AppleSupport / $AAPL
AMAZON.COM, INC.	@Amazon / $AMZN
FACEBOOK, INC.	@Facebook / $FB
THE 3M COMPANY	@3M / $MMM
TESLA, INC.	@Tesla / $TSLA
TWITTER, INC.	@Twitter / $TWTR

PROGRESS MILESTONES

① Collect, Prepare and Label Data
② Recreate and Verify Previous Research
③ Language Processing
④ Model Definitions (LR, SVM-RBF, MNB)
⑤ Feature Selection Tests
⑥ Conversion to Streaming SGD/MNB
⑦ Retraining and Reverification
⑧ Evaluation

University of BRISTOL