

Classifying Stock Excess Returns Using the Sentiment Analysis of Financial News

Farshid Balaneji¹, Dietmar Maringer¹, Irena Spasic¹

Abstract

Financial market participants closely follow the media to make informed decisions about the market direction. The news sentiment could impact the stock market's return and volatility. In this study, we select ten companies from Dow Jones Index and apply four different sentiment measurement methods on three granularity levels. Target-dependent sentiment analysis is one of the under-investigated scores that we consider in our study. We also consider the news publishers' role in the outcome. This study employs the XGBoost algorithm with Bayesian hyperparameter optimization to learn the excess return direction in the next business day. The initial out-of-sample results show above %70 accuracies in binary classification problems.

Keywords: financial news, excess return, XGBoost, Targeted sentiment analysis

Email addresses: farshid.balaneji@unibas.ch (Farshid Balaneji),
dietmar.maringer@unibas.ch (Dietmar Maringer), SpasicI@cardiff.ac.uk (Irena Spasic)