

Name: Ciaran McAteer

Degree: MSc in Management of Information Systems

Title of Dissertation: Twitter Sentiment Analysis to Predict Bitcoin Exchange Rate

Supervisor Name: Susan Leavy

Year: 2014

Abstract

The microblogging platform Twitter has become a valuable source of user sentiment. This paper presents an evaluation of Twitter sentiment as a useful metric for predicting financial markets, specifically the bitcoin exchange rate. The tweets associated with the bitcoin digital currency are tracked in order to determine if the user sentiment contained within those tweets reflects the exchange rate of the currency. The sentiment of users' tweets is categorised as having a positive, negative or neutral opinion of the virtual currency using machine learning techniques. Time series analysis is performed which reveals that there is a positive correlation between the Twitter sentiment and the bitcoin exchange rate, and that sentiment is reflected in price after a time delay of 24 hours. Other aspects of Twitter, such as volume of tweets related to the subject, and a separate analysis of retweets, also observe a relationship to the bitcoin digital currency.