

**Prediction of SELL recommendation of stocks using Logistic
Regression, Support Vector Machine, and K-Nearest
Neighbors**

Withanage Don Sanath Hemantha

A dissertation submitted in partial fulfilment of the requirement for
Master of Science degree in Business Analytics

**Department of Computing
Informatics Institute of Technology, Sri Lanka
in collaboration with
Robert Gordon University**

2022

Abstract

The stock market is one of most complex systems in the world, which consists of stocks whose prices goes up and down, without generating a clear pattern. Various factors impact to these up and downs of the stock prices.

This work tries to apply machine learning algorithms to predict the decline in stock prices by more than 7% (the decision point when the investors will sell a stock), with 2 weeks in advance. For this work, 3 different machine learning algorithms will be used which are logistic regression, support vector machine, and k-Nearest neighbors with feature selection and without feature selection. Therefore, altogether 6 machine learning models will be run and finally will decide which one perform better in predicting whether a stock should be sold or not.

The logistic regression model with feature selection outperformed all the other models having greater results and it was considered the most balanced method in terms of scores.