Abstract

This thesis aims to scrutinise price gaps in the stock market. The key objective is to analyse candlestick charts surrounding price gaps and determine whether any patterns accompany their presence. Firstly, the thesis briefly describes candlestick patterns, literature relevant to price gaps and Convolutional Neural Network (CNN) as the method of choice. Price gaps are studied in a 5-minute time frame in the data of all S&P 500 constituents in the years from 2015 to 2021. By feeding images of the candlestick chart into the CNN, the proposed model reaches an Accuracy of 74.2% in predicting whether a future price will be higher or lower than the price at the gap. This result can be translated into a statement that the CNN detects hidden patterns around the price gaps. Furthermore, the thesis finds that these patterns differ across individual stocks. The thesis also shows that including news sentiment in the analysis does not improve the ability to discover patterns.

JEL Classification	C45, C55, C88, G14, G15, G41
Keywords	price gap, convolutional neural network, pattern detection, news sentiment
Title	Price gaps in the stock market