ABSTRACT

Thesis contains: 88 p., 6 tables, 23 fig., 2 add. and 20 references.

STOCK INDEX, MULRILAYER NEURAL NETWORK, CONVULATION NEURAL NETWORK, LONG SHORT-TERM MEMORY, LEARNING, OVERFITTING, MODEL LOSS, MODEL ACCURANCY

The theme: Stock index analysis approach using artificial neural networks.

The purpose of this work is to implement and analyze neural network architectures in order to determine which type of neural network shows the best results in stock index forecasting. To solve the problem, a multilayer neural network, a convolutional neural network and a long short-term memory network are used. The object of the study is the time series of Apple's stock indexes. The subject of the study is a multilayer neural network, convolutional neural network and a long short-term memory network as methods for stock index forecasting. The relevance of the study is stock index forecasting in a context of changes and large amounts of information. The result of this work is the neural network architecture, which accurately predicts the stock index.

For further research, it is advisable to learn the neural network on high-frequency data, use all available information on stock prices, and use more sophisticated neural network architectures. However, this requires the availability of information that is not publicly available, as well as the large computing power of used computer systems.