BABES-BOLYAI UNIVERSITY CLUJ-NAPOCA

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

SPECIALIZATION COMPUTER SCIENCE

DIPLOMA THESIS

A tool for predicting and retrieving currency exchange rates

Supervisor:
Prof. dr. Gabriela Czibula

Author:
Bodea Adonis Sebastian

2020

Context

Most people are afraid of investing in the currency exchange rates market. It is volatile, it calls for a lot of patience and, probably most important, it requires a lot of accurate and relevant information to actually make a good decision. Given these drawbacks, it is no wonder not many people are thrilled to take the risk. But what if an application existed that could remove some of these disadvantages, let you visualize existing currency rates and make an accurate prediction for you of how EUR will change tomorrow for example? This is what "A tool for predicting and retrieving currency exchange rates" proposes to do.

Introduction

Predictions are something each and every one of us do on a daily basis. Whether we think about changing our job, choosing a life partner or making a new investment, we are all making a forecast about what the future holds [5]. Some of the predictions are easy enough for us to make using our reasoning and available information but, unfortunately, there are also some events which are extremely difficult to predict, so we turn to people or, more recently, to machines which have a better expertise than us.

Financial predictions, and namely exchange rates predictions, fall into latter category. Their unpredictable nature rises mostly from the socioeconomic and political factors which influence them at every step. This characteristic was discussed at length by Meese and Rogoff in their paper [3], which states that "there is no better economic model for exchange rates forecasting during floating exchange rates than the simple random walk" [1]. This result remained widely accepted in literature and became one of the main reasons researchers turned their interest to models from other domains to try to solve this particular forecasting domain.

Particularly, in computer science, a model which seemed to yield good prospects of getting to grips with this problem is neural networks. The fact that this model is data driven and can capture the non-linearly nature of this time-series data [2] captured the attention of researchers and gave rise to multiple papers and articles [1][4][6].

References

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