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The Effect of Kernel Functions on Cryptocurrency Prediction Using Support Vector Machines

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Abstract

Forecasting in the financial sector has proven to be a highly important area of study in the science of Computational Intelligence (CI). Furthermore, the availability of social media platforms contributes to the advancement of SVM research and the selection of SVM parameters. Using SVM kernel functions , this study examines the four kernel functions available: Linear, Radial Basis Gaussian (RBF),

Polynomial, and Sigmoid kernels, for the purpose of cryptocurrency and foreign exchange market prediction . The available technical numerical data, sentiment data, and a technical indicator were used in this experimental research, which was conducted in a controlled environment. The cost and epsilon-SVM regression techniques are both being utilised, and they are both being performed across the five datasets in this study. On the basis of three performance measures, which are the MAE, MSE, and RMSE, the results have been compared and assessed. The forecasting models developed in this research are used to predict all of the outcomes. The SVM-RBF kernel forecasting model, which has outperformed other SVM-kernel models in terms of error rate generated, are presented as a conclusion to this study.

Author keywords

Computational Intelligence (CI); Cryptocurrency ; Linear Kernel ; Polynomial Kernel ; Radial Basis Gaussian (RBF) kernel ; Sigmoid Kernels; Support Vector Machine (SVM)

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