Loan Repayment Prediction Using Machine Learning: Model Development, Django Web Integration and Cloud Deployment

Authors : Seun Mayowa Sunday

Abstract : Loan prediction is one of the most significant and recognised fields of research in the banking, insurance, and the financial security industries. Some prediction systems on the market include the construction of static software. However, due to the fact that static software only operates with strictly regulated rules, they cannot aid customers beyond these limitations. Application of many machine learning (ML) techniques are required for loan prediction. Four separate machine learning models, random forest (RF), decision tree (DT), k-nearest neighbour (KNN), and logistic regression, are used to create the loan prediction model. Using the anaconda navigator and the required machine learning (ML) libraries, models are created and evaluated using the appropriate measuring metrics. From the finding, the random forest performs with the highest accuracy of 80.17% which was later implemented into the Django framework. For real-time testing, the web application is deployed on the Alibabacloud which is among the top 4 biggest cloud computing provider. Hence, to the best of our knowledge, this research will serve as the first academic paper which combines the model development and the Django framework, with the deployment into the Alibaba cloud computing application.

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