PERSONAL CREDIT RISK MANAGEMENT SYSTEM FOR SRI LANKAN BANKS

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Abstract

Financial sector and banks are the leaders of a country's economic development. Therefore, banks set immense effort into managing credit losses because it causes a huge impact on their performance. The latest business patterns associated with digitalization have altered the prevailing credit risk functions. Increased demand for automation and digitalization in banks compile exabytes of structured and unstructured data. Therefore, has imposed an urgent necessity of tightening the credit risk management systems. Many countries utilize big data and deep learning techniques for default predictions. However, for countries like Sri Lanka, this concept is still untouched. Compared to traditional machine learning techniques, deep learning techniques have drawn attention in banking credit risk analysis because of their strengthened training power. However, limited research is available on utilizing the deep learning techniques for credit risk predictions. The objective of this project was to develop a personal credit risk prediction system using the RNN-LSTM model. The final design of the LSTM model is comprised of two LSTM layers with dropout of 0.2, two dense layers with 25 nodes and 1 node where the last dense layer associate with sigmoid function. RMSE value was 0.44 and the accuracy of the final model developed for defaulter prediction was 73.61%. According to the obtained results it is substantiated that there is a high possibility to employ LSTM architecture for defaulter prediction system.