
Predicting the job satisfaction of freelancers using machine learning algorithms: A study based in Sri Lankan context

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As a result of technological enhancement, freelancing has become a significant business field all over the world. During the COVID-19 pandemic, millions of people worldwide lost their jobs, and some countries are facing financial crises in different ways because of the low foreign exchange reserves. Therefore, freelancing is a proper solution for those kinds of situations and it is become important to find the freelancers' job satisfaction. The main objective of this study is to create a model to predict the job satisfaction of freelancers in Sri Lanka using machine learning algorithms. It's potential to do this study since no previous research is directly relevant to this study. Primary data is gathered through social media platforms like Facebook, WhatsApp, and LinkedIn from freelancers in Sri Lanka using a Google form. Initially, the collected data is pre-processed and the model is created by analyzing the data set using five supervised machine learning algorithms such as Naïve Bayes, Support Vector Machine (SVM), Decision tree (J48), Random Forest, and Multilayer Perception (MLP). In this study, the cross-validation test option is used, and 10 folds showed a better output. The decision tree shows the best results among those algorithms shown as 92.5% accuracy rate as the highest accuracy including the highest precision, recall, and f-measure. Root Mean Square Error (RMSE) and Mean Absolute Error is the lowest in the decision tree algorithm. The result will help to predict the job satisfaction of freelancers and make relevant arrangements at the earliest for the freelancers' issues.

Keywords: Classification, Freelancing jobs, Machine learning, Prediction, Supervised learning

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