UNIVERSITI TEKNOLOGI MARA

MOBILE APPLICATION : COIN IDENTIFICATION USING MACHINE LEARNING

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STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledge in accordance with the standard referring practices of the discipline.

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ABSTRACT

Most of the human work has been replaced by computers in recent years. With the rise of mobile technology and Internet access, recent developments in machine learning have designed many algorithms to solve diverse human problems. The prevailing transfer learning method in recent years enables researchers and engineers to conduct experiments within limited computing and time constraints. Due to a lack of exposure in image processing and the numerous designs of Malaysia coins, mobile coin identification technology is still not widely employed in Malaysia. Moreover, the procedure of classifying coins of various values is time-consuming since the number of coins in Malaysia is a lot. It is necessary to develop a system that is capable of accurately recognizing and identifying coins in a short amount of time. Therefore, this paper outlines the steps involved in creating a mobile application for Coin Identification using Machine Learning. Besides that, it introduces the many designs of Malaysian coins. The three machine learning types and classification techniques such as Support Vector Machine, K-Nearest Neighbors, Neural Network, and Naive-Bayes Classifier are defined and studied. In Literature review, the features from the already existing coin identification mobile application are compared by their advantages and limitations. The coin dataset will be trained and tested using the chosen technique. In methodology, the design and application architecture take place to determine the optimal model to deploy it in the mobile application. The official design and implementation of the application will also be stated to state the working progress for the final year project. This includes the limitations of the mobile application that were not able to be fulfilled and future improvements that could be added in the near future.

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