

UNIVERSITI TEKNOLOGI MARA

**DIAGNOSIS AND TREATMENT
RECOMMENDER SYSTEM FOR
MYOCARDIAL INFARCTION
USING DECISION TREE AND
SUPPORT VECTOR MACHINES
(SVM)**

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ABSTRACT

Myocardial infarction which commonly known as heart attack is a critical medical condition that demands accurate diagnosis followed by an appropriate treatment plan. This project presents the development process of the prototype for diagnosis and treatment recommender system for myocardial infarction using decision tree and support vector machine (SVM) algorithms. Healthcare professionals can benefit from this prototype system that uses ECG images for myocardial infarction diagnosis while recommending proper treatments based on patient clinical information. The prototype functions by initially allowing the user to upload an ECG image which will be processed using SVM for feature extraction and classification. If the ECG image is classified as indicative of myocardial infarction, the user inputs additional patient clinical data. The decision tree algorithm functions after this point. The prototype processes collected clinical data using these algorithms to confirm diagnoses while determining the level of patient severity. The user interface of the prototype is designed to be user-friendly, minimizing the risk of user error and ensuring smooth workflow. The ultimate goal of this system is to improve patient outcomes by enabling precise diagnosis and personalized treatment recommendations. The support vector machines (SVM) model achieved an accuracy of 94.48% while the decision tree model achieved an accuracy of 96.47%.

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