# ABSTRACT

# COMPARISON ANALYSIS OF ABILITY OF RANDOM FOREST ALGORITHM WITH SUPPORT VECTOR MACHINE TOWARDS HEPATITIS DIAGNOSIS CLASSIFICATION

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This study analyzes the comparison of two algorithms namely Random Forest and Support Vector Machine (SVM) for classification that focuses on the results of observations of the two algorithms to be compared. The purpose of this research is to find the best algorithm between Random Forest and Support Vector Machine (SVM) for the classification of life expectancy of patients with hepatitis. The results of the classification are expected to be able to minimize as early as possible delays in the treatment of hepatitis patients. The data used in this study is data sourced from the UCI website Machine Learning. Furthermore, classification will be carried out using an algorithm Random Forest and Support Vector Machine (SVM). The data classification process produces accuracy values and computation time as parameters to determine the algorithm with the best performance. The algorithm can later be used as the basis for making a system in further research. Accuracy results on the data training shows that the algorithm Support Vector Machine (SVM) is superior with an accuracy value of up to 93% compared to the algorithm Random Forest with an accuracy value of 86%. Accuracy results on the data testing the two algorithms being compared namely Random Forest and Support Vector Machine (SVM) has the same accuracy value of 75%. As for the comparison of algorithm computation time Support Vector Machine (SVM) faster in comparison Random Forest is good on process training nortesting. On process training algorithm Support Vector Machine (SVM) with computation time 0.007908100000008744 seconds faster in comparison Random Forest 0.015628337860107422 seconds. The process testing algorithm Support Vector Machine (SVM) is faster 0.00621889999993255 seconds compared to Random Forest 0.02214336395263672 seconds. So, it can be concluded that the algorithm Support Vector Machine (SVM) is superior in comparison to Random Forest in this case.

Keywords: Classification, Hepatitis, Random Forest, Support Vector Machine (SVM).