

ABSTRACT

The number of patients that had infected by Diabetes Mellitus (DM) has reached 415 million patients in 2015 and by 2040 this number will rise approximately increase up to 642 million patients. Deal with large amount of medical data is another benefit to fights against DM. The main objective of this research is to leverage F-Score feature selection and fuzzy support vector machine in classifying and detecting DM. Feature selection will be used to identify the valuable features in dataset, SVM will train the dataset to generate the fuzzy rules, Fuzzy inference process is used to classify the output and Pima Indian Diabetes (PID) will be adopted as the research dataset. This research shows a quite promising accuracy with 88% and has a strength in optimizing the count of Fuzzy rules to provide sufficient accuracy compare to another research with less accuracy but provide more Fuzzy rules in execution.

Keywords: Diabetes Mellitus, Feature Selection, Fuzzy Logic, Support Vector Machine, Pima Indian Diabetes