

## **Abstract**

**Sentiment analysis is a method for determining sentiment from subjective information. Many benefits can be achieved from subjective information processing. Ironically the large variety and amount of information in this era actually makes the rise of a need for a computational methods, namely sentiment analysis. One way of determining it is classification. Analysis of movie review is one of the field of sentiment analysis application. There are two main problems in sentiment analysis in the movie review field. Firstly, there are too many words in it. Therefore analysis becomes slow and insensitive. Secondly, the sentiment determination method also encountered problems due to the need for Hyperparameter determination for the right classification method. To solve these two problems, in this paper a scheme is proposed, namely the implementation of Particle Swarm Optimization (PSO) in the feature selection process (SVM-FS) as well as optimization in determining Hyperparameter from Support Vector Machine (SVM-FS-HP). The PSO algorithm maximizes SVM performance by iteratively searching for feature subset and Hyper Parameter values. The test results using ten fold cross validation indicate that the proposed scheme is able to reduce features by up to 50% and increase accuracy by 3.68%.**

**Keywords: sentiment analysis, text classification, feature selection, support vector machine, hyperparameter, particle swarm optimization**