

## Abstract

E-mail spam are unsolicited messages that sent to multiple recipients via e-mail in large numbers. The example of e-mail spam is advertisement e-mail, bid to join the MLM, sweepstakes, fake information, phishing and fraud. With this e-mail spam, an e-mail users need more time to read and decide whether the e-mail received is spam or not.

In this work, we built an e-mail spam filtering system using *Granular Support Vector Machine-Recursive Feature Elimination* (GSVM-RFE) algorithm. The GSVM-RFE separately eliminates irrelevant, redundant, or noisy word at email in different granules at different stages and selects highly informative word that used in classification. With that kind of word GSVM-RFE can produce 98% accuracy with 8192 words

**Keywords:** *e-mail spam filtering, granular computing, fuzzy C-means clustering, recursive feature elimination, relevance index, support vector machines,*