EMAIL SPAM DETECTION MODEL WITH HYBRID PARTICLE SWARM OPTIMIZATION AND NEGATIVE SELECTION ALGORITHM

Ismaila Idris, Assoc. Prof. Dr. Ali bin Selamat
Faculty of Computer Science and Information Systems,
Universiti Teknologi Malaysia
isme_idris@yahoo.co.uk, aselamat@utm.my

ABSTRACT
The thesis is aimed at developing a model for email spam detection using hybrid particle swarm optimization with negative selection algorithm as classifier. Representation of dataset is viewed as the most effective way to enhance negative selection algorithm for spam detection. The quest for higher performance accuracy with stable result coupled with efficient and adequate handling of uncertainties in spam detection and also the unique ability of immune system and other intelligence algorithm to deal with different forms of uncertainties that characterize spam dataset while generating spam detector without additional computational cost are the bases for the research work. Also, the increased interest in hybrid computational intelligent systems in recent times coupled with the reported success of these hybrid systems in many real-world complex problems informed the combination of different computational intelligent techniques in achieving the goals of this research work. The thesis implement a binary matching rule with the combination of hamming distance and r-chunk matching rules to generate a hybrid matching detector. Particle swarm optimization was proposed to help improve the representation of the dataset. New model are generated for spam detector by the combination of negative selection algorithm and particle swarm optimization and the result are classified and evaluated with different accuracy measure.

KEYWORD
negative selection algorithm, particle swarm optimization, self, non-self