

## **A technique to reduce support vector machine error in feature transformation based on multi-objective particle swarm optimization**

Sam M. K., Wang Zhang, Khadija Shazly

1. The higher institute of Telecommunication & Engineering, Information Technology Department, Philippines
2. School of Earth and Space Sciences, Peking University, Beijing, 100871, China
3. Faculty of computer and information, Mansoura university, Egypt

Emails: [mksam963@gmail.com](mailto:mksam963@gmail.com), [W\\_Zhang@chinamail.com](mailto:W_Zhang@chinamail.com),  
[khadijashazly@students.mans.edu.eg](mailto:khadijashazly@students.mans.edu.eg)

### **Abstract**

The application of discriminative approaches can improve pattern recognition and classification accuracy.

As discriminative transformations that are applied to features or as discriminative learning algorithms that are employed by classifiers, these methods can be utilized in any of those capacities. The majority of discriminative feature transformation measures do not take into account the errors and information associated with the classification procedure.

In this research, we offer a method for transforming features for use with a support vector machine that takes into account both the discrimination of features and the error in classification.

In order to accomplish this, we make use of Multi-Objective Particle Swarm Optimization, also known as Multi-PSO. Within the Multi-PSO fitness function, we include the aforementioned criteria as objectives. The proposed multi-PSO-based feature transformation method outperforms other standard methods of feature transformation when it is employed as a preprocessing step for SVM, as shown by the experimental results on the UCI dataset.

(Keywords:)

Feature Transformation, Discrimination, Multi-Objective Particle Swarm Optimization, Support Vector Machine

# REQUEST FOR FULL TEXT

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