

Multiclass Support Vector Machines with Simultaneous Multi-Factors Optimization for Corporate Credit Ratings

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Abstract : Corporate credit rating prediction is one of the most important topics, which has been studied by researchers in the last decade. Over the last decade, researchers are pushing the limit to enhance the exactness of the corporate credit rating prediction model by applying several data-driven tools including statistical and artificial intelligence methods. Among them, multiclass support vector machine (MSVM) has been widely applied due to its good predictability. However, heuristics, for example, parameters of a kernel function, appropriate feature and instance subset, has become the main reason for the critics on MSVM, as they have dictate the MSVM architectural variables. This study presents a hybrid MSVM model that is intended to optimize all the parameter such as feature selection, instance selection, and kernel parameter. Our model adopts genetic algorithm (GA) to simultaneously optimize multiple heterogeneous design factors of MSVM.

Keywords : corporate credit rating prediction, Feature selection, genetic algorithms, instance selection, multiclass support vector machines

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