Determining Parameters of Support Vector Machines by Genetic Algorithms—Applications to Reliability Prediction

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Abstract—Due to the lack of a structure way in determining the free parameters of support vector machines (SVMs), this study uses genetic algorithms (GAs) to select parameters of SVMs. In addition, the developed SVMG (support vector machine with genetic algorithms) model is applied to reliability prediction. Two numerical examples in the literature are employed to illustrate the performances of various prediction models. Empirical results reveal that the proposed model provides more accurate prediction results than the other forecasting models. Therefore, the presented SVMG model offers a promising alternative in reliability prediction.

Keywords—Support vector machines (SVMs), Genetic algorithms (GAs), Prediction, Reliability

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