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Credit Risk Evaluation Using Genetic Programming

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Abstract : Credit risk is considered as one of the important issues for financial institutions. It provokes great losses for banks. To this objective, numerous methods for credit risk evaluation have been proposed. Many evaluation methods are black box models that cannot adequately reveal information hidden in the data. However, several works have focused on building transparent rules-based models. For credit risk assessment, generated rules must be not only highly accurate, but also highly interpretable. In this paper, we aim to build both, an accurate and transparent credit risk evaluation model which proposes a set of classification rules. In fact, we consider the credit risk evaluation as an optimization problem which uses a genetic programming (GP) algorithm, where the goal is to maximize the accuracy of generated rules. We evaluate our proposed approach on the base of German and Australian credit datasets. We compared our finding with some existing works; the result shows that the proposed GP outperforms the other models.

Keywords : credit risk assessment, rule generation, genetic programming, feature selection
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