A Two-Tier Classification Model for Financial Fraud Detection

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Abstract

Financial fraud has become a daunting challenge for the business companies and baking organizations worldwide. The development of new technologies has provided further and more complicated ways in which criminals commit fraud that result in disastrous consequences. In this paper, we propose a Linear Discriminant Analysis-based novel financial fraud detection model which performs a two-tier classification based on three separate linear discriminant functions. Each function performs its own classification based on the training data and derives its own decision boundary for classification. Then, our two-tier model takes the final classification decision by utilizing the individual decisions of these discriminant functions. We evaluate the performance of our model using real-life datasets in terms of several standard metrics. Besides, we compare the performance of our model with that of several other models found in the literature. Our experimental results suggest that our model achieve reasonably improved classification performance compared to the state-of-the-art ones.
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Index Terms

Computer Science Security

Keywords

Financial Fraud Detection Linear Discriminant Analysis Multilevel Learning.