Abstract

Financial fraud is increasing significantly with the development of modern technology and the global superhighways of communication, resulting in the loss of billions of dollars worldwide each year. The companies and financial institution loose huge amounts due to fraud and fraudsters continuously try to find new rules and tactics to commit illegal actions. Thus, fraud detection systems have become essential for all credit card issuing banks to minimize their losses. The most commonly used fraud detection methods are Neural Network (NN), rule-induction techniques, fuzzy system, decision trees, Support Vector Machines (SVM), Artificial Immune System (AIS), genetic algorithms, K-Nearest Neighbor algorithms. These techniques can be used alone or in collaboration using ensemble or meta-learning techniques to build classifiers. This paper presents a survey of various techniques used in credit card fraud detection and evaluates each methodology based on certain design criteria. And this survey enables us to build a hybrid approach for developing some effective algorithms which can perform well for the classification problem with variable misclassification costs and with higher accuracy.
Analysis on Credit Card Fraud Detection Techniques: Based on Certain Design Criteria

References

- Clifton Phua, Vincent Lee, Kate Smith, and Ross Gayler (2005). “A comprehensive survey of data mining-based fraud detection research”. In Artificial Intelligence Review.
- De Castro Silva, L. N., & Zuben, F. J. V. (2000). “An evolutionary immune network for data clustering”. In Proceedings of the IEEE SBRN (Brazilian Symposium on Artificial Neural Networks); (84–89).
- Joseph King-Fung Pun (2011). \textit{Improving Credit Card Fraud Detection using a Meta-Learning Strategy}. A thesis submitted in conformity with the requirements for the degree of Master of Applied Science Graduate Department of Chemical Engineering and Applied Chemistry University of Toronto.
Analysis on Credit Card Fraud Detection Techniques: Based on Certain Design Criteria

- Peter J. Bentley, Jungwon Kim, Gil-Ho Jung and Jong-Uk Choi (2000). "Fuzzy Darwinian Detection of Credit Card Fraud," In the 14th Annual Fall Symposium of the Korean Information Processing Society; (1-4).
International Journal for Information Security Research (IJISR), Volume 1, Issue 4; (229-235).


**Index Terms**

Computer Science

Security
Keywords
credit card fraud  fraud detection