

Improved ATM clustering to increase the security of bank transaction using fuzzy techniques

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The banking system relies heavily on using ATMs, cash recycler and credit cards as the main component of its payment processing systems. The proper functioning of payment processing systems makes it possible to carry out transactions safely and, as a result, helps the cash flow process in the community. Customer accounts are at fraud risk exposure. The primary security risk is the identification and management of accessing to customer funds. Various solutions have been proposed in the research background. Intelligent data mining techniques were used to extract data patterns. Key variables for detecting fraud were analyzed depending on the identification applied techniques, and they have provided useful patterns for diagnosis, by analyzing the banking financial collections. In this dissertation, we facilitated clustering and analysis according to several variables by providing a multi-stage plan, in the financial data set. The proposed scheme provides the possibility of creating an expert system by increasing the accuracy and decreasing false positive cases by determining the number of optimum clusters for the input set, the Fuzzy C-Means clustering technique, and extracting the governing rules among the variables and clusters obtained. The results the analysis of the obtained clusters indicate that the proposed scheme can validate the MSUFCU dataset with a mean error of 0.005 and a Kappa coefficient of 1.

Keywords : _Fuzzy Clustering, Fraud Detection, Neural Network, MSUFCU Dataset, Davies Bouldin Index_

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