

CREDIT CARD FRAUD DETECTION USING IMPROVED GRADIENT BOOSTING ALGORITHM

Hari Priya S

Akshatha R

Dr. J.Bhavithra Assistant Professor (SG)

Department of CSE

Dr Mahalingam College of Engineering and Technology

Credit card fraud detection using machine learning is a crucial application aimed at identifying fraudulent transactions in real-time. This approach leverages advanced algorithms to analyse patterns, detect anomalies, and classify transactions as legitimate or fraudulent. The process involves training models on large datasets containing transaction details, including features like amount, time, location, and merchant information. Techniques like supervised learning, unsupervised learning, and deep learning are commonly employed. Supervised models, such as logistic regression, decision trees, or support vector machines, use labeled data to learn fraud patterns, while unsupervised methods like clustering identify outliers in unlabeled data. The existing system utilizes Convolutional Neural Networks (CNNs) to enhance fraud detection accuracy in credit card transactions. The key innovation of this system lies in the use of multiple optimization functions to optimize the CNN model's performance in identifying fraudulent activities. The proposed system focused on the Gradient Boosting algorithm. It is utilized as the core model due to its ability to handle imbalanced datasets and capture complex patterns. The model is trained and evaluated using a comprehensive set of metrics, including accuracy, precision, and recall.