



CREDIT CARD FRAUD DETECTION

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Abstract : With the increase in credit card transactions, credit card fraud has increased significantly in recent years. Therefore, the main purpose of fraud detection systems is to detect frauds accurately even before fraud is committed. The goal is to detect and detect the counterfeit nature of fraud. There are a number of ways to detect credit card fraud, such as lineback, retransmission, Random Forest Classifier, k-means clustering and other machine learning algorithms. the purpose of discovery.

Keywords: MACHINE READING, DATA SCIENCE, PYTHON, NUMPY, PANDAS, MATPLOTLIB, SEABORN AND TRUE INTELLIGENCE

I. INTRODUCTION

Credit cards are now the most popular way for customers to do offline or offline. There are many reasons, as shown below, because consumers are slowly moving from debit to credit cards, especially in developing countries like India.

- Profitable return options and reward points are available for each credit card purchase. These are usually not issued to financial institutions by debit cards.
- Bind credit cards with online and offline merchants, especially during the holiday season such as Diwali, Eid, and Christmas, to provide additional shopping discounts. Several online retailers run their own advertising campaigns, which are covered with credit cards — for example, Amazon Prime Day, which happens at least once a year.
- Emergency needs can be met (for example, medical emergencies, life events, etc.) quickly instead of having the same adequate account balance. Most credit cards offer 0% EMI options, so it makes it even more important to pursue this goal.
- Having a good credit history helps to create good CIBIL points, which, in turn, help customers to profit see for themselves the best and most competitive interest rates on long-term needs such as mortgages or car loans.
- Credit cards are tailored to the needs of each customer. For example, customers who want to use a credit card for daily use are usually offered a card with no annual payments or joining payments (marketed as free lifetime credit cards). On the other hand, we have premium cards with annual fees or joining fees for wealthy people who offer golf memberships, access to airport terminals, seamless sales to international and local retailers with low transaction fees, 5x to 10x points, etc. each test and anything that fits best continues. And the main goal is to find fraud by refining the above strategies to get the best result.

However, with all these benefits, we also have the added advantage of being easy to use without having to carry cash, and we can get a record of all our digital transactions with credit card statements much easier compared to purchases with cash or bank statements. . Another negative that has been proven over the last few years of this growing digital situation is the increase in credit card fraud. Fraud can be a few types, as we will try to understand later in this blog.

II. LITERATURE REVIEW

[1] **.Kuldeep Randhawa:** They used twelve machine learning algorithms to detect credit card fraud where their range is standard from neural network to deep learning. They track the performance of benchmarks and real-world databases. Additionally, AdaBoost and many voting methods are used to create hybrid models. As there is a related study it describes individual models and hybrids. In both parameters (Benchmark and real world database) provided results using the selected 12 algorithms namely Naïve Bayes, Random Forest, Decision Tree, Gradient Boosted Tree, Decision Stump, Random Tree, Neural Network, Linear Regression, Deep. Reading, Rejecting, SVM, Multilayer Perceptron.

[2] **.Shiyang Xuan:** They make comparisons based on two random forests. A random forest based on a tree based on a random cart. They use different random forest algorithms to train the behavioural characteristics of common and unusual tasks and both algorithms differ in their basic categories and functionality. They have used both algorithms in the e-commerce data company in China. When the fraudulent activity on the scale of small sets is 1: 1 to 10: 1. As a result, the accuracy from a random tree-based forest is 91.96% while the CART-based random forest is 96.7%. As the data used came from the B2C database many problems came up as unequal data. Therefore, the algorithm can be upgraded. [Random Forest of Credit Card Fraud Recovery].

III. RESEARCH METHODOLOGY

- The method proposed by this paper, uses the latest machine learning algorithms to perform complex tasks, called outliers. A closer look at the larger scale and real life Elements.
- First, we obtained our database from Kaggle, a data analysis website that provides data sets. Within this database, there are 31 columns of which 28 are named v1-v28 to protect sensitive data. Some columns represent Time, Value and Class.
- Time indicates the time gap between the first and next actions.
- The amount is the amount of money made.
- Class 0 represents a valid practice and 1 represents a counterfeit

IV. RESULTS AND DISCUSSION

Screenshots of an active project

The next section shows the screenshots of the active project

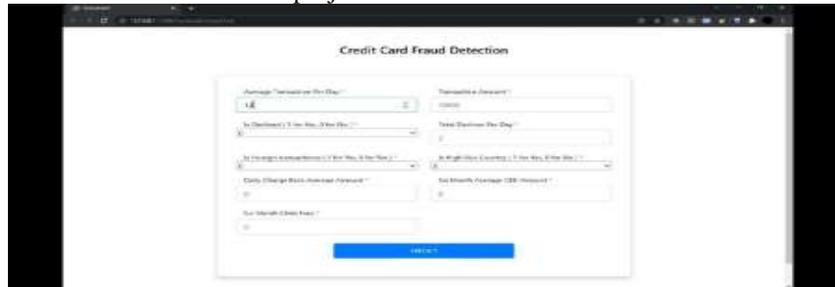


Figure1. Home tab



Figure2. Valid Activity



Figure3. Fraudulent Detection Detected

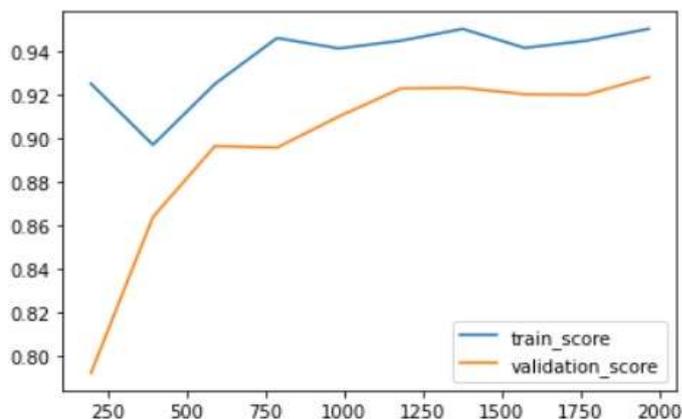


Figure 4. 1 Test Result

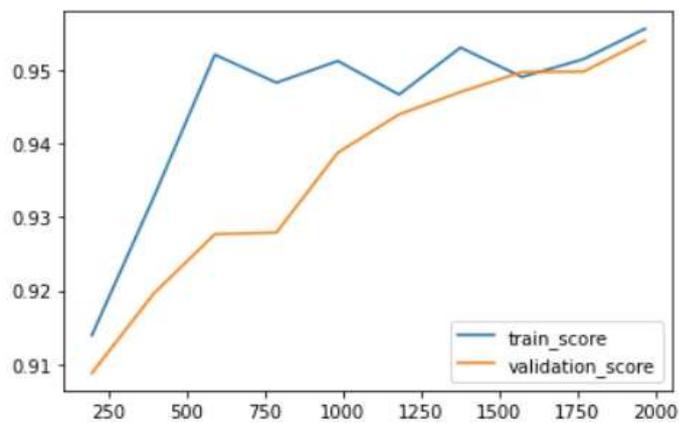


Figure 5. Test Outcome 2

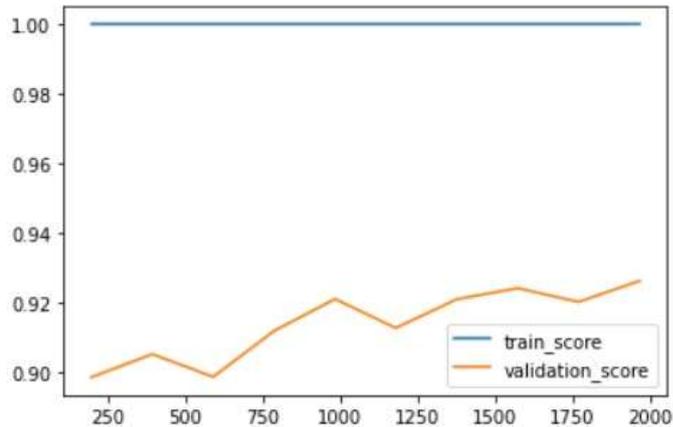


Figure 6. Test Outcome 3

V.ACKNOWLEDGMENT

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REFERENCES

- [1] Kuldeep Randhawa, Chu Kiong Loo, Manjeevan Seera, Chee Peng Lim and Asoke K.Nandi, "Credit card fraud detection through AdaBoost and majority vote," IEEE Access, vol.6, pp. 14277-14284, 2018.
- [2] A. Roy and J. Sun and R. Mahoney and L. Alonzi and S. Adams and P. Beling, "Finding deep fraud in credit card transactions," in Systems and Information Engineering Design Symposium (SIEDS), pp. 129 -134, 2018.
- [3] Guanjun Liu, Zhenchuan Li, Lutaο Zheng, Shuo Wang and Changjun Jiang ShiyangXuan, "The Random Jungle for Finding Credit Card Fraud," at IEEE 15th International Conference On Networking, Sensing and Control (ICNSC), pp.1 -6, 2018.
- [4] Zarrabi, H. Kazemi, "Using deep networks to detect credit card fraud," IEEE 4th International Conference on Knowledge-Based Engineering and Innovation (KBEI), pp. 0630-0633, 2017.
- [5] John O., Adebayo O. Adetunmbi, and Samuel A. Oluwadaren Awoyemi, "Credit card fraud detection using machine learning strategies: Comparative analysis." International Conference on Computing Networking and Informatics (ICCNi) , pp. 1-9, 2017.