# Patent Search

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**Abstract:**

The invention relates to a system and method of building an e-commerce fraud detection system with AI and Data Mining Techniques. The first step in building an is collection, which involves gathering a comprehensive dataset containing both legitimate and fraudulent transaction data. Preprocessing techniques are then applied data, handle missing values, and perform feature engineering to extract meaningful information. Data mining techniques, such as clustering, association rule mining, anomaly detection, are employed to uncover patterns and anomalies in the dataset. These techniques aid in identifying suspicious activities and fraud patterns that r hidden within the data. Machine learning models play a crucial role in fraud detection. Algorithms such as logistic regression, decision trees, random forests, support machines, and neural networks are trained on the labeled data to classify transactions as legitimate or fraudulent. Ensemble methods further enhance the model's p by combining multiple models. Real-time monitoring systems are implemented to analyze incoming transactions in real-time, utilizing the trained model to assess the associated with each transaction. Suspicious activities are flagged for further investigation, aiding in proactive fraud prevention. Feature selection techniques are utili identify the most relevant features that contribute to fraud detection, reducing dimensionality and improving the model's efficiency. Continuous model improvement to keep up with evolving fraud patterns. Regular updates and incorporating new fraud patterns into the model ensure its effectiveness over time. Collaboration with f analysts, domain experts, and stakeholders is crucial to gain insights and refine the fraud detection model. Evaluating the model's performance using metrics such as precision, recall, F1 score, and ROC analysis helps assess its effectiveness and make necessary adjustments. As per present invention, e-commerce fraud detection wi data mining techniques offers businesses the ability to proactively identify and prevent fraudulent activities, mitigating financial losses and maintaining customer trus online ecosystem.

**Complete Specification**

Description:FIELD OF THE INVENTION

[01] The embodiments of the present invention generally relates to the field of E-Commerce, Computer AI and Data Mining Techniques. More particularly, the prese invention relates to building an effective E-Commerce fraud detection model using Computer AI and Data Mining Techniques.

BACKGROUND OF THE INVENTION

[02] The following description of related art is intended to provide background information pertaining to the field of the disclosure. This section may include certain of the art that may be related to various features of the present disclosure. However, it should be appreciated that this section be used only to enhance the underst of the reader with respect to the present disclosure, and not as admissions of prior art.

[03] Some of the challenges and potential problems associated with an e-commerce fraud detection models using AI and data mining techniques are listed below:

[04] Imbalanced Data: E-commerce fraud datasets are typically highly imbalanced, with a significantly lower number of fraud instances compared to legitimate trans This class imbalance can lead to biased models that perform poorly in detecting fraud. Special techniques, such as oversampling or under sampling, need to be em to address this issue

View Application Status