

Fraud Detection

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Abstract

Fraud detection in banking systems has become an essential requirement due to the rapid growth of digital transactions and online banking services. Financial fraud causes significant losses to banks and customers every year. This paper presents a smart fraud detection system that uses machine learning and real-time transaction monitoring to identify suspicious banking activities.

Keywords

Fraud Detection, Banking Security, Machine Learning, Transaction Monitoring, Artificial Intelligence

1. Introduction

Banking fraud refers to unauthorized or illegal activities performed to obtain money, assets, or sensitive banking information. With the increase in internet banking, mobile banking, UPI payments, and card transactions, fraud cases have also increased rapidly.

2. Types of Banking Fraud

- Credit Card Fraud
- Identity Theft
- Online Transaction Fraud
- ATM Fraud
- Loan Fraud

3. Traditional Fraud Detection Techniques

Manual Monitoring, Rule-Based Detection, OTP Verification.

4. Machine Learning Based Fraud Detection

Algorithms used include Decision Tree, Random Forest, Support Vector Machine, and Logistic Regression.

5. Deep Learning Based Fraud Detection

Artificial Neural Networks improve fraud detection accuracy in real time.

7. Challenges and Future Scope

AI integration, biometric verification, cloud-based monitoring, and improved fraud analytics.

8. Result

The system identifies suspicious transactions and generates alerts instantly.

9. Conclusion

Machine learning and AI improve fraud detection speed and accuracy in modern banking systems.

References

1. Banking cybersecurity journals
2. Fraud detection research papers
3. Machine learning financial security studies