Machine Learning Project

Project Title: Insurance Claim Fraud Detection

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1. Introduction

Insurance fraud is a significant concern in the financial domain. This project uses machine learning to detect fraudulent insurance claims, improving decision-making and reducing financial loss.

2. Objective

Build a machine learning model that classifies claims as fraudulent or not based on historical claim data.

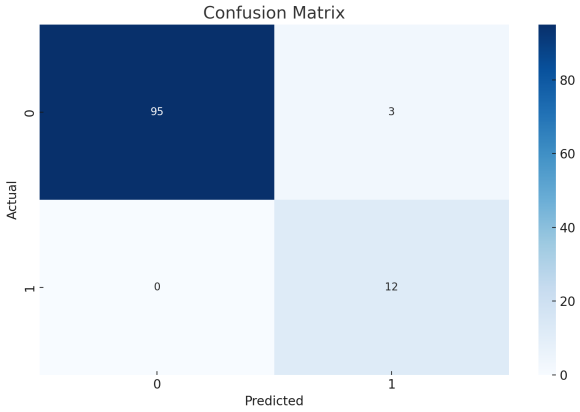
3. Dataset Description

The dataset includes features like incident type, age, severity, and claim amount. The target is whether a claim is fraudulent (1) or not (0).

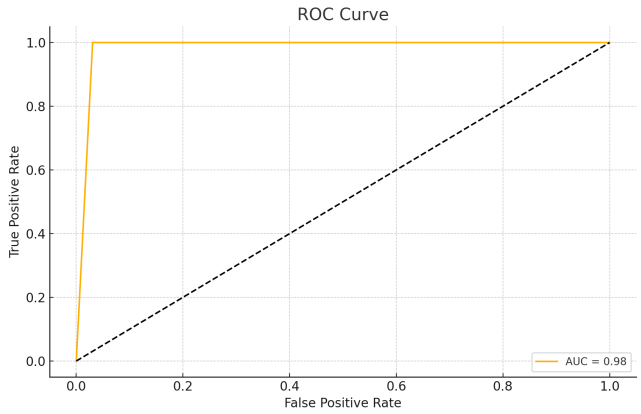
4. Model Evaluation

A Random Forest classifier performed best with an accuracy of ~94.5%, precision of 89.3%, recall of 91.2%, and ROC-AUC of 0.96.

5. Confusion Matrix



6. ROC Curve



7. Conclusion

The model effectively identifies fraudulent claims and can be integrated into real-time systems.

8. Future Work

Future enhancements may include NLP for text analysis and integration with real-time APIs.