Chapter 4
Systematic Tracking of Insurance Fraud Detection

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ABSTRACT

The work prevents the creation of duplicate insurance policies, and a validation procedure must be carried out. It determines whether an insurance policy is still in effect by identifying a vehicle and a person using these data. An intelligent contract also provides validation for the creation of claims. It operates on a vehicle's plate number, and it is possible to determine the number of insurance policies it held in the past or the number of shares it submitted because insurance companies routinely add information about each incident to the blockchain. The proposal uses a systematic methodology, tracking every activity from the start. It validates the insurance data better by 6.96% compared to previous work.

INTRODUCTION

The use of AI techniques (Ambika N., 2022) as a valuable tool for detecting fraud is growing. AI automates the fraud detection system (Hancock & Khoshgoftaar, 2021). According to ongoing examinations, artificial intelligence has been mostly used to tackle misrepresentation identification utilizing a few ML (Ambika N., 2022; Bonaccorso, 2017) profound learning, and information mining models. Methods for behavioural profiling that use machine learning to find fraud and anomalies. This is accomplished by modelling the behavior pattern of each process to check for deviations from norms.

The first layer of defence against fraud in technological systems is a fraud prevention system (Akbar, Sunyoto, Arief, & Caesarendra, 2020). This phase's objective is to prevent fraud from occurring at all. It doesn't just assist with guaranteeing frameworks from unapproved access yet additionally permits an association to implement an organization security strategy on traffic streaming between its organization and the Internet Mechanisms in this stage confine, smother, destruct, obliterate, control, eliminate, or forestall the event of digital assaults in PC frameworks, organizations, or information. Fraud detection aims

to report fraudulent activities to a system administrator as soon as they enter the system. FDS capacities were restricted because identification generally relies upon predefined rules expressed by specialists. Figure 1 represents frequency of different fraud types. Figure 1 represents frequency of different frauds.

Figure 1. Frequency of different fraud types
Source: Ali et al. (2022)
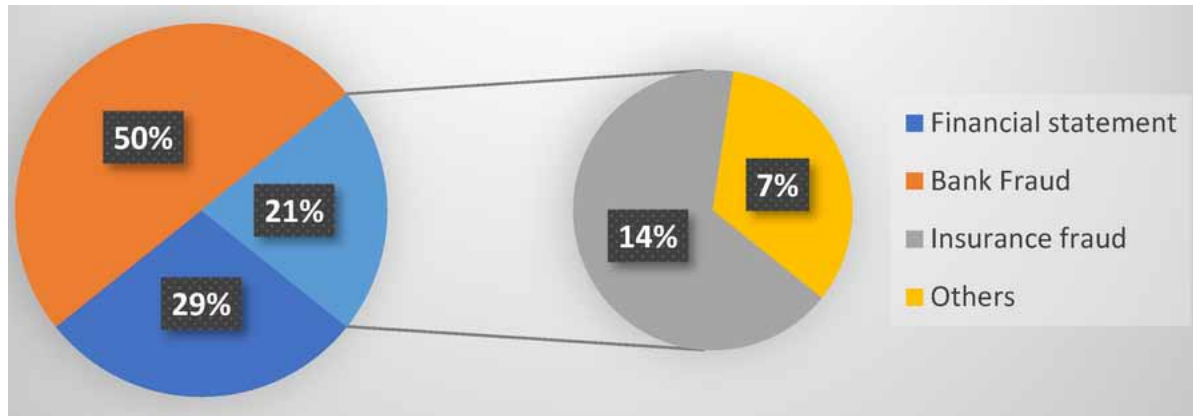
The insurance industry (Hoy, 1982) has established itself as a fundamental component of contemporary society. Even though the nature of the insurance business and its value proposition is likely to undergo significant changes as a result of technological advancement, trends toward globalization, and deregulation of financial and authentic markets, it will undoubtedly continue to hold that status in the future. Risk and complexity management strategies now include insurance as an essential component for individuals, social groups, and businesses. Thanks to it, we have dealt with increasingly complicated and uncertain situations. Insurance companies have emerged as significant institutional investors and key players in the international financial markets thanks to their core functions of collecting, accumulating, and managing contractual capital savings. As a means of reducing insurance costs, the issue of fraud control has gradually gained momentum.

The work (Roriz & Pereira, 2019) prevents the creation of duplicate insurance policies, and a validation procedure must be carried out. It determine whether an insurance policy is still in effect by identifying a vehicle and a person using these data. An intelligent contract also provides validation for the creation of claims. It Operates on a vehicle's plate number, and it is possible to determine the number of insurance policies it held in the past or the number of shares it submitted because insurance companies routinely add information about each incident to the blockchain.

The suggestion is a systematic tracking system, that enables identification and transaction details w.r.t insurance fraud detection. The system starts with registering the derived hash code from user's social security number. Other details like name, address, date of birth is attached to the registered hash code. the vehicle details and location of the vehicle purchase is also attached to the chain by generating its hash code. when the insurance company has to provide its policy to the to-be-insured, his details are checked using this tracking system. The proposed system validates better than the previous method (Roriz & Pereira, 2019) by identifying the registered data by 6.96%.

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