



FRAUD ANALYTICS IN INSURANCE

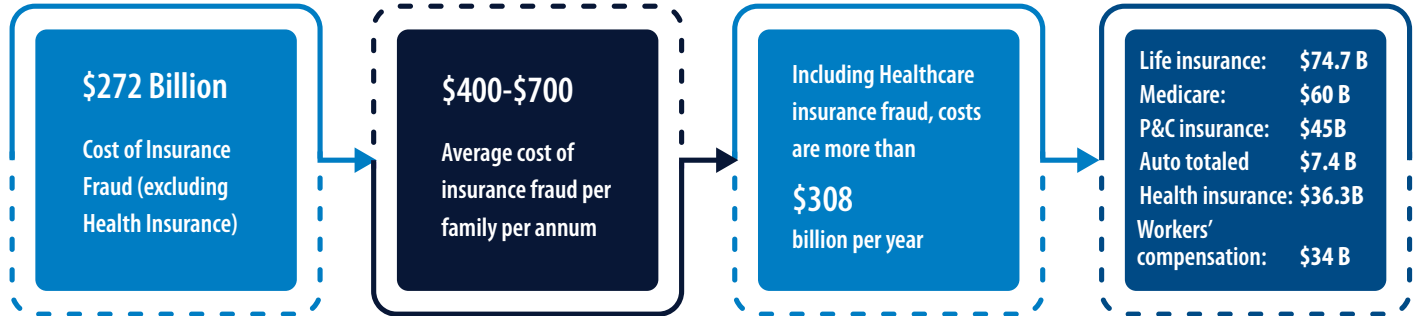
Abstract

Insurance works on principle “uberrimae Fides” which means “utmost good faith”. On the other hand, frauds occur in the Insurance industry to obtain an illegitimate gain. It is essential for insurers to detect the frauds to prevent serious losses to the company and the customers. Insurance industry needs to develop capability that can help identify potential frauds. Generative AI has the potential to enhance fraud detection in the insurance sector by generating authentic looking synthetic data that closely resembles actual transactions this artificial data can help identify and prevent fraudulent activities more effectively. Generative AI analyses vast amounts of data and detects patterns indicative of fraudulent behavior.

Insurance Fraud

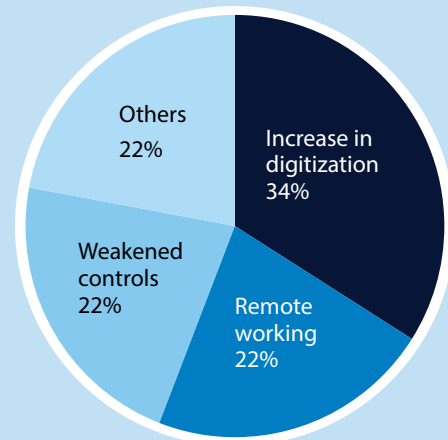
Insurance fraud is a deliberate offense where individuals or insurance professionals engage in dishonest actions to obtain monetary benefits either by deceiving an insurance company or acting on its behalf.

Insurance fraud can involve various parties including those seeking insurance, policyholders, third-party claimants or even professionals assisting claimants. It's not limited to policyholders alone; insurance agents and company staff also may undertake fraudulent activities.



Reasons attributed for fraud

In today's day and age, technology has become a mainstay for almost all industries. This has only accelerated with the pandemic. A key driver of this change has been digitization, which has enabled employees to work from home and helped companies seamlessly connect with their customers. Increased digitization and remote working, followed by weakened controls are the top reasons for increased fraud incidents.

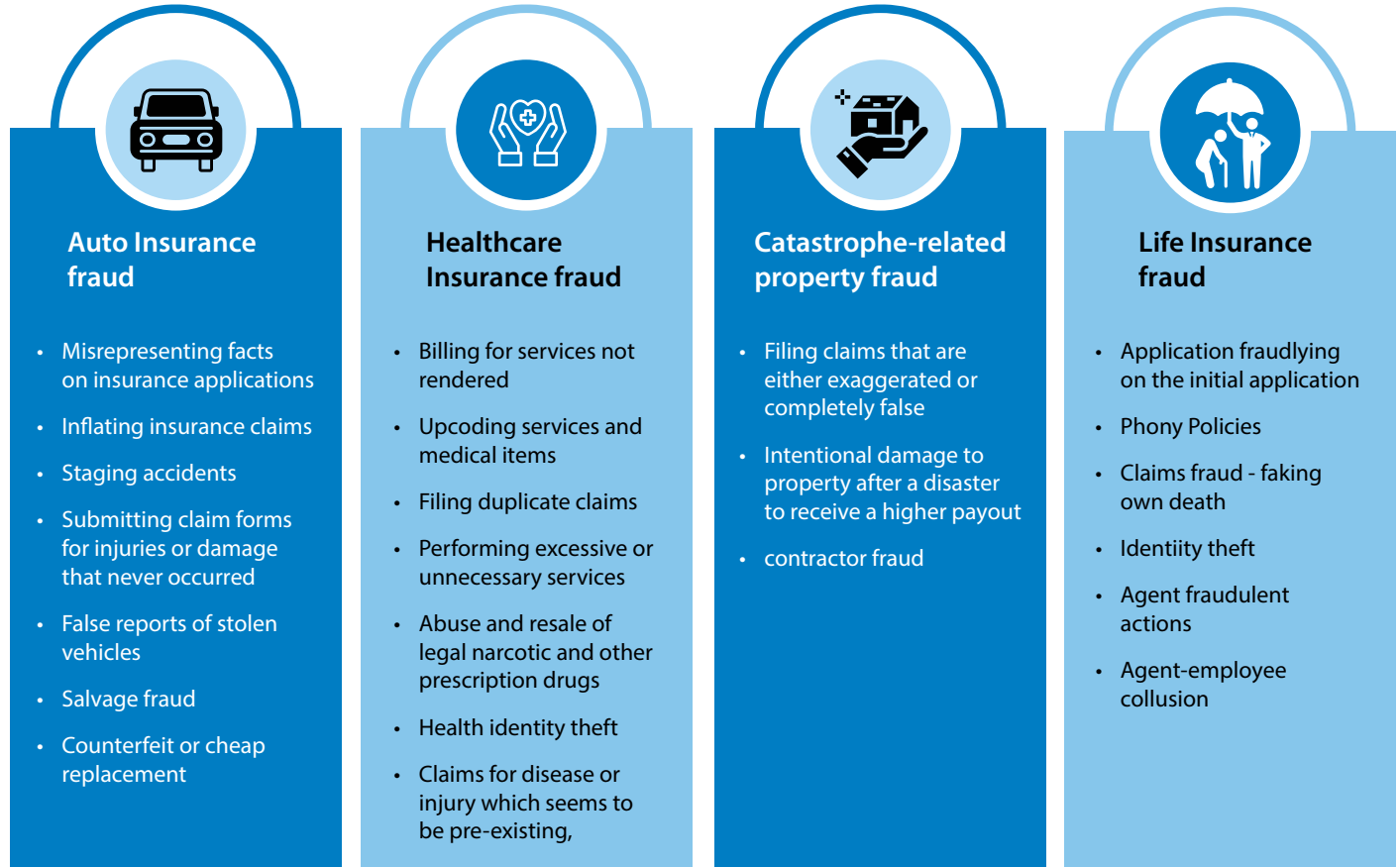


Impact on people



Insurance Fraud Occurrences across different Insurance Products

In Insurance industry frauds can be initiated from various sources such as insurance company, agent, adjuster, customer. Insurance Fraud is a variety of types and occur in all areas of insurance and they vary from product to product. Frauds are different in various domains such as life insurance, auto insurance, catastrophe-related property insurance, healthcare insurance as they differ in area of coverage, risk assessment, interactive points, required documents, claim process. Certain types of insurance are at a higher risk of fraudulent activities incidence compared to others. Below are the instances of customer-initiated frauds in different lines of the business in insurance industry.



Fraud in Life Insurance

In 2023, fraud in the life insurance industry has become a major concern, globally and in the US domestic market. The increasing use of technology and the advancement of complex financial products have created new opportunities for fraudulent activity.

Life insurance fraud is when someone deceives an insurance company for personal gain. This can take many forms, but common types of life insurance fraud are application fraud, death fraud, forgery, and phony policy fraud. Common types of life

insurance fraud include lying on an application to get cheaper pricing and altering someone else's policy without their approval. It's crucial to understand that the repercussions of life insurance fraud can differ significantly based on the unique circumstances involved. However, it is clear that this type of fraud can have a devastating impact on both the perpetrator and the victim. Some of the most common consequences are policy cancellation, increased premiums, denial of death benefit, criminal charges, civil lawsuits.

20% of Life insurance claims are denied during the contestability period

Insurance fraud can be categorized into customer initiated and non-customer initiated based on the initiator/source of the fraudulent action.

Customer initiated fraud risks in Life Insurance

Customer-initiated life insurance fraud occurs when an individual (applicant or beneficiary) is dishonest with an insurance company to benefit financially. Common instances of life insurance fraud are as below

- Lying on an application, such as withholding important medical history, or tampering with someone else's insurance policy
- Claims fraud, commonly called death fraud, occurs when someone fakes their own death or the death of the loved one in order to collect the life insurance death benefit.
- Another type of claim's fraud is when a beneficiary abets the elimination of the policyholder to get a payout.

Non-Customer initiated fraud risks in Life Insurance

Fraud can occur during the process of buying, using, selling, or underwriting insurance. Fraud done by an insurance agent, an insurance employee or someone posing as an authorized representative of an insurance company or agent are non-customer initiated frauds. Examples of these types of fraud in various stages of life insurance are listed below.



Source	Stage	Description	Impact	Detection Stage	
 Employee	Application	Policies made out in the name of related parties, employees as beneficiaries	Inflated VONB, Higher claim payouts	Application	
 Agent	Application	Suppressed health information	Acceptance of risk	Claim	
 Employee	 Agent	Application	Agent/ employee collusion in influencing policy issuance overlooking underwriting risks	Acceptance of risk	Claim
 Employee	 Agent	Application	Diversion of directly sourced business to agents	Commission Leakage	Cumulative Forensic
 Agent	Renewal	Issuance of fake receipts for premium collected by cash from customers	Claim litigation, Reputational risks	Policy closure	
 Employee	 Agent	Renewal	Renewal policies routed as new business	Inflated VONB, Commission Leakage	Cumulative Forensic
 Agent	Policy Closure	Influenced policy surrenders	Inflated VONB, Reputational risks	Policy closure	
 Employee	 Agent	Claim	Customer-Agent-employee collusion in claim settlement	Claim leakage, Reputational risks	Claim
 Employee	 Agent	Claim	Claim amount siphoning via claim payment through agent-employee accounts/ beneficiaries	Claim litigation, Reputational risks	Claim
 Agent	NA	Customer data sold to outside entities	Reputational risks	Event based	



Fraud detection in life insurance:

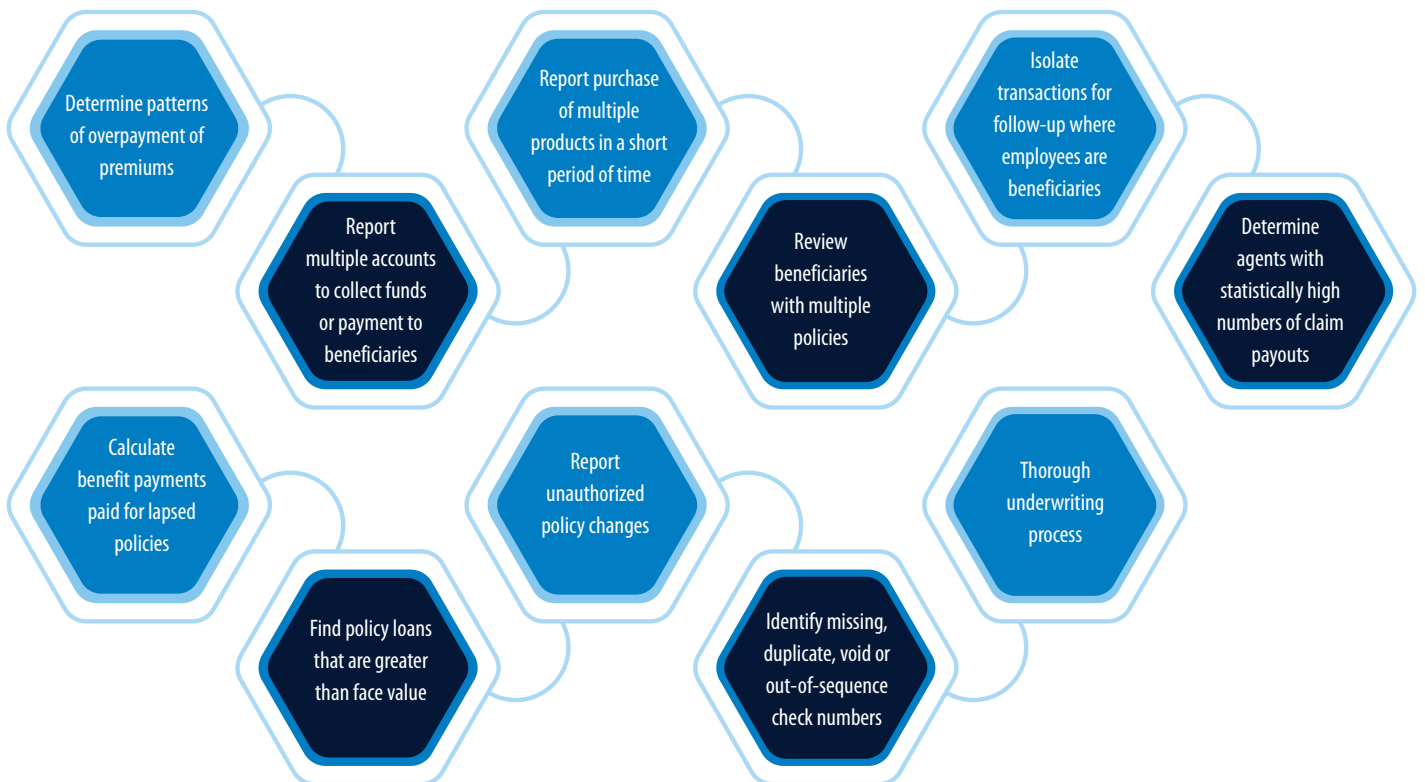
Fraud detection is a critical aspect of maintaining the integrity and financial stability of the life insurance industry. With the potential for significant financial losses and reputational damage, life insurance companies face the ongoing challenge of identifying and preventing fraudulent activities.

Effective fraud detection in the life insurance sector requires a combination of advanced technologies, data analytics, and industry

expertise. By detecting and mitigating fraud, insurers can protect the interests of policyholders, ensure fair pricing for genuine customers, and maintain the overall sustainability of the insurance market.

We will also explore the key challenges faced by life insurance companies in fraud detection and the strategies they employ to combat fraudulent activities.

How to detect:



Challenges faced by Insurance Companies for Fraud Detection

- Poor Data Quality, Integration & Silos
- Too Much Dependence on Historical Data
- Frauds going undetected in case of sampling method
- Safety & Security of Information
- Excessive False Positives
- Evolving Fraud Techniques
- Insider Fraud
- Complex Networks and Collusion
- Inadequate mechanisms to promote data sharing amongst insurers

Role of Data and Analytics in Life Insurance Fraud Detection

In the realm of life insurance, the battle against fraud is a critical one. To safeguard the industry's integrity and protect the interests of policyholders, the role of data and analytics in life insurance fraud detection cannot be overstated. By harnessing the vast amounts of data available, insurers can leverage advanced analytics techniques to uncover patterns, detect anomalies, and identify potential fraudulent behavior. Through the analysis of comprehensive policyholder information, claims data, medical records, and other relevant sources, data-driven approaches can

reveal hidden connections, red flags, and suspicious activities that may go unnoticed through traditional methods. These insights enable insurers to take proactive measures to prevent fraud, mitigate risks, and ensure the financial stability of their operations. The role of data and analytics in life insurance fraud detection extends beyond detection alone. It also facilitates more efficient investigation processes, enabling insurers to allocate resources effectively and focus on cases with the highest potential for fraud.

34%

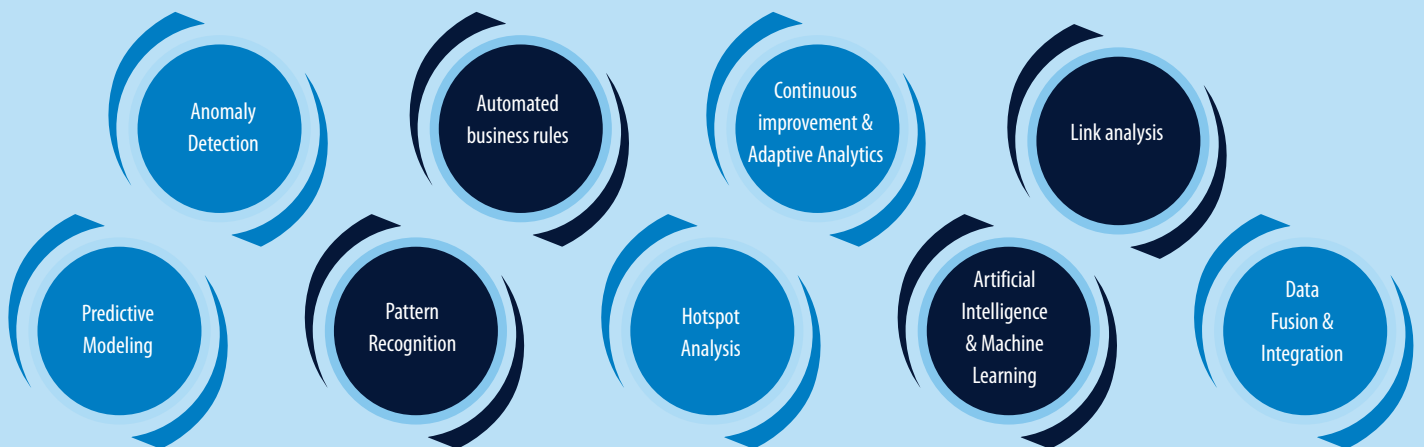
of organizations currently contribute to a data-sharing consortium to help prevent and detect fraud¹

And another

24%

would be willing to contribute to one in the future.¹

Data Analysis Techniques to Fight Fraud



Powering Fraud Detection in Life Insurance through AI

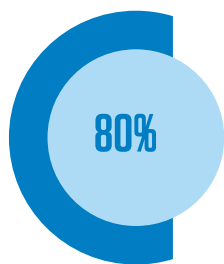
In the increasingly complex landscape of fraud detection, insurance companies are turning to cutting-edge technologies to enhance their capabilities. Among these technologies, artificial intelligence (AI) has emerged as a powerful tool in the fight against fraudulent activities. By leveraging AI algorithms and machine learning techniques, insurers can analyze vast amounts of data, uncover unusual patterns, and identify suspicious behaviors that may indicate fraudulent claims or policyholder activities.

The role of AI in fraud detection in insurance goes beyond traditional rule-based systems, allowing insurers to adapt and evolve alongside the ever-changing tactics employed by fraudsters. AI-powered fraud detection systems can learn from historical data, detect anomalies, and make real-time decisions, enabling timely intervention and prevention of fraudulent activities.

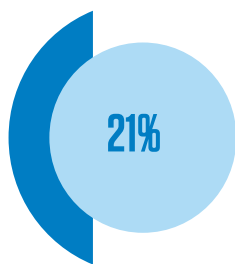
AI & Insurance:

The AI in insurance market size is valued at USD **6.92** billion by 2028 and is expected to grow at a compound annual growth rate of **24.05%** in the forecast period of 2021 to 2028²

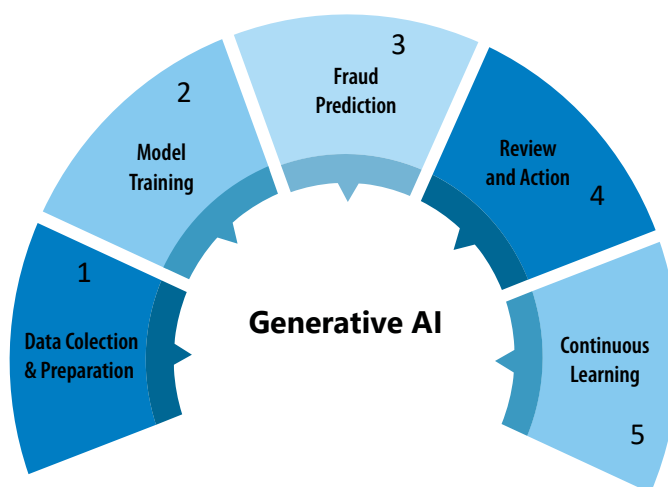
Global **Generative AI** in Insurance Market size is expected to be worth around USD 5,543Mn by 2032 from USD 346.3 Mn in 2022, growing at a CAGR of 32.9% during the forecast period from 2023 to 2032.



of insurers currently use predictive modeling to detect fraud



of insurers plan to invest in AI in the next 1-2 years



Application of AI in Fraud detection:

Graph Analytics: Graph analytics is used to analyze complex relationships and networks between entities, such as policyholders, beneficiaries, agents, and transactions.

Explainable AI: Explainable AI (XAI) focuses on developing AI models that provide transparent explanations for their decisions and predictions.

Voice Analytics: Voice analytics technology is used to analyze recorded phone conversations during the underwriting or claims process.

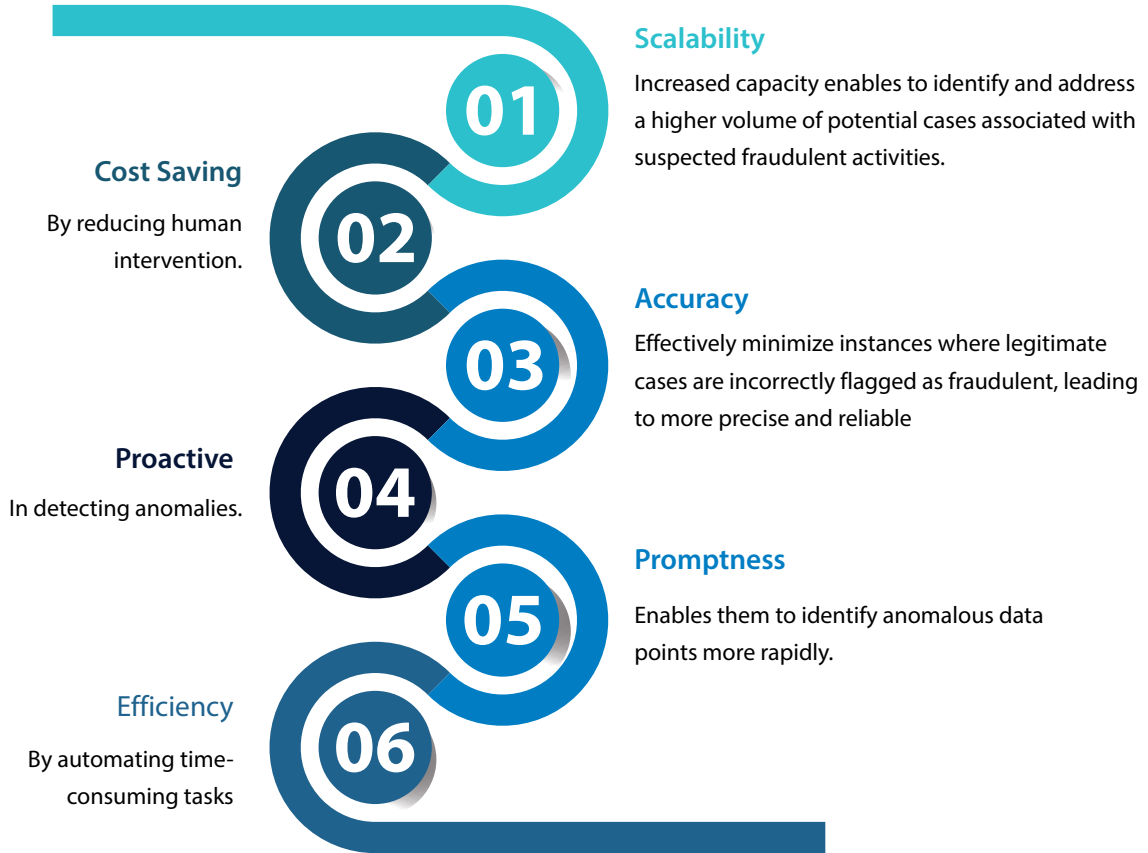
Predictive Modeling for Policyholder Behavior: Predictive modeling techniques can be applied to analyze policyholder behavior and identify deviations from expected patterns.

Text Mining and Natural Language Processing: Employed to analyze large volumes of textual data, including claim forms, medical records, and communication with policyholders. These methods can detect linguistic patterns, inconsistencies, or misleading statements that may indicate fraudulent activities.

Sentiment analysis can be applied to assess the authenticity and emotional tone of claim-related communications.

Geographic Analysis: Allows insurers to examine location-based data, enabling them to uncover potentially fraudulent activities.

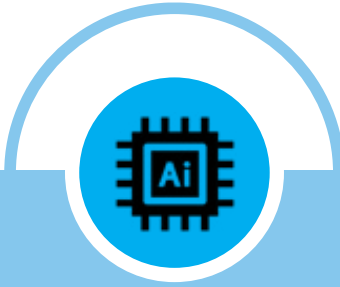
Benefits of Data & Analytics in Fraud Detection



Insurance fraud solutions today:



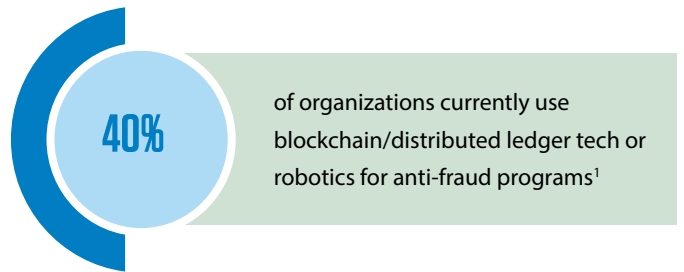
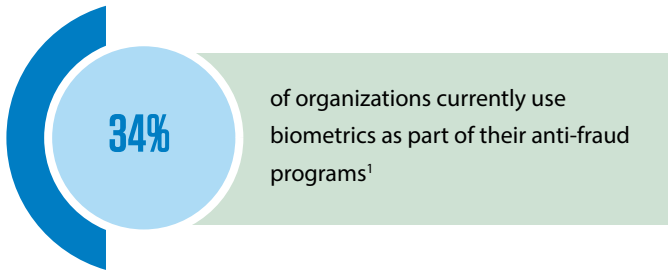
Predictive analytics for pro-active risk scoring















AI and machine learning to continuously monitor and analyze insurance data for fraud.



Behavioral analytics for identify verification



How MS technologies can help

	D365 CUSTOMER INSIGHTS	Unified & consolidated view of Customer with transactional, behavioral, and demographic data along with AI capabilities to unlock insights on potential frauds
	D365 CUSTOMER SERVICE	Effectively manage fraud cases, track and report on organization's fraud investigations
	AZURE COGNITIVE SERVICES	Cognitive Services Vision & Speech APIs for Biometric verifications to prevent fraud detection, identity thefts
	AZURE MACHINE LEARNING STUDIO	Build AI Models based on historical fraud data to predict potential fraudulent transactions, flag risk and fraud suspects
	AZURE STREAM ANALYTICS	Real time data analytics leveraging fraudulent transaction algorithm
	POWER AUTOMATE	Automated programs to detect anomalies, review the current and former financial transactions, on a timely basis, to identify uneven patterns indicating illegal (often fraudulent) activities
	POWER BI	By integrating data from various sources, including fraud-related data, organizations can gain valuable insights and identify patterns or anomalies that may indicate fraudulent activities.
	MICROSOFT DYNAMICS 365 FRAUD PROTECTION	It utilizes AI and ML capabilities to analyze transactions, detect suspicious patterns, and provide real-time risk assessment and mitigation.
	MICROSOFT GRAPH	By integrating Microsoft Graph into fraud detection systems, organizations can leverage data from multiple Microsoft applications, to gain a holistic view of customer interactions and identify potential fraud indicators.
	MICROSOFT SQL SERVER	Organizations can leverage SQL Server's data processing capabilities, data integrity features, and advanced querying options to efficiently store and retrieve fraud-related information for analysis and investigation.
	MICROSOFT DEFENDER FOR OFFICE 365	It helps detect and block phishing attempts, malicious attachments, and other email-based fraud schemes, reducing the risk of falling victim to fraudulent activities.
	MICROSOFT AZURE SENTINEL	Collects and analyzes security data from various sources, including logs and alerts from different applications and can detect and investigate potential fraud-related security incidents.

Conclusion:

In conclusion, the application of fraud analytics in the insurance industry has become paramount in combating fraudulent activities and protecting the integrity of the sector. By harnessing the power of data, advanced algorithms, and analytics techniques, insurers can detect patterns, identify anomalies, and uncover potential instances of fraud.

Fraud analytics enables insurers to stay one step ahead of fraudsters, adapting to evolving tactics and emerging threats. The continuous learning capabilities of machine learning models ensure that fraud detection methods remain effective and up-to-date in an ever-changing landscape. The benefits of fraud analytics extend beyond detection alone. Insurers can streamline investigation processes, allocate resources efficiently, and focus efforts on high-risk cases. By doing so, they can effectively mitigate risks, minimize financial losses, and protect the interests of honest policyholders.

In this ever-evolving landscape, the integration of fraud analytics as a fundamental component of insurance operations will be pivotal, enabling insurers to stay vigilant, resilient, and committed to maintaining the highest standards of integrity and trust.

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1. <https://www.acfe.com/fraud-resources/anti-fraud-technology-benchmarking-report>
2. <https://www.databridgemarketresearch.com/reports/global-artificial-intelligence-ai-in-insurance-market#:~:text=Market%20Analysis%20and%20Insights%20%3A%20Global,period%20of%202021%20to%202028>

About the Authors



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Sita Ratnam is a seasoned senior consultant with overall experience of seventeen years, dedicated to delivering innovative solutions in dynamic world of insurance. With a rich background in the insurance industry, she brings extensive domain expertise to the table. Her passion lies in leveraging the power of dynamics 365 CRM to drive business excellence and transformation. She's always eager to connect with fellow professionals, clients and industry peers.



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Meti Pradeep, is senior consultant with Microsoft practice with over eleven years of insurance industry and IT experience. With a keen focus on delivering contextualized solutions, Pradeep is driven by a passion for transformative outcomes that fuel business growth and elevate customer experiences. His unique ability to bridge the gap between insurance industry intricacies and Dynamics 365's potential ensures the delivery of tailored solutions that revolutionize the way businesses operate and engage with their customers.

Infosys Cobalt is a set of services, solutions and platforms for enterprises to accelerate their cloud journey. It offers over 35,000 cloud assets, over 300 industry cloud solution blueprints and a thriving community of cloud business and technology practitioners to drive increased business value. With Infosys Cobalt, regulatory and security compliance, along with technical and financial governance comes baked into every solution delivered.

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