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Jatayu

Detection and Prevention of Fraudulent Payments"

Amit Yadav
Prateek Kumar Singh
Anand Gupta

Team :Mount India

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Business Need/ Opportunity

Identification of Business Problem

A Detection system aimed to address the financial and reputational harm caused by fraudulent claims.

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Describe within few sentences like an elevator pitch ?

Fraudulent payments can cause significant financial losses and damage to reputation for any business. Our payer fraud detection system uses advanced analytics and machine learning techniques to identify and prevent fraudulent transactions in real-time, protecting your bottom line and maintaining customer trust with our clients. With our system, you can ensure compliance with regulatory requirements and industry standards, while also saving time and resources, by automating the fraud detection process.

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Describe within few sentences like an elevator pitch ?

What unmet need does it serve? Why does the customer/ target segment may want this?

- Need of identifying and preventing fraudulent activity in various industries.
- Reputation protection
- Decrease human authentication in person service
- Peace of mind flow of work

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- **Financial stability:** Fraudulent payments can cause significant financial losses for businesses, which can have a negative impact on the overall economy. By addressing the need for effective fraud detection, businesses can protect their finances and contribute to overall financial stability.
- **Consumer protection**: Fraudulent payments can also harm consumers, who may be left with unauthorized charges or other financial losses. By addressing the need for effective fraud detection, businesses can protect consumers from financial harm.
- **Compliance**: Many businesses are subject to legal and regulatory requirements for preventing and detecting fraud. By addressing the need for effective fraud detection, businesses can comply with these requirements and avoid fines and penalties.
- **Innovation**: The field of fraud detection is constantly evolving, as fraudsters develop new methods and technologies. By addressing the need for effective fraud detection, businesses and researchers can drive innovation in the field and stay ahead of evolving fraud threats.
- **Trust**: By protecting their finances and reputation, businesses can build and maintain the trust of their customers and stakeholders.

Describe within few sentences like an elevator pitch ?

What unmet need does it serve? Why does the customer/ target segment may want this?

Why is it important for you to address this need?

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Describe within few sentences like an elevator pitch ?

Our idea/solution for fraud detection will create value for the customer by protecting them from financial loss and potentially saving them time and resources that would have been spent on resolving fraudulent activity. Additionally, it may also improve the customer's trust and confidence in the business using the tool being used.

What unmet need does it serve? Why does the customer/ target segment may want this?

Why is it important for you to address this need?

What value will the idea/ solution create for the customer/ target segment?

Market Potential

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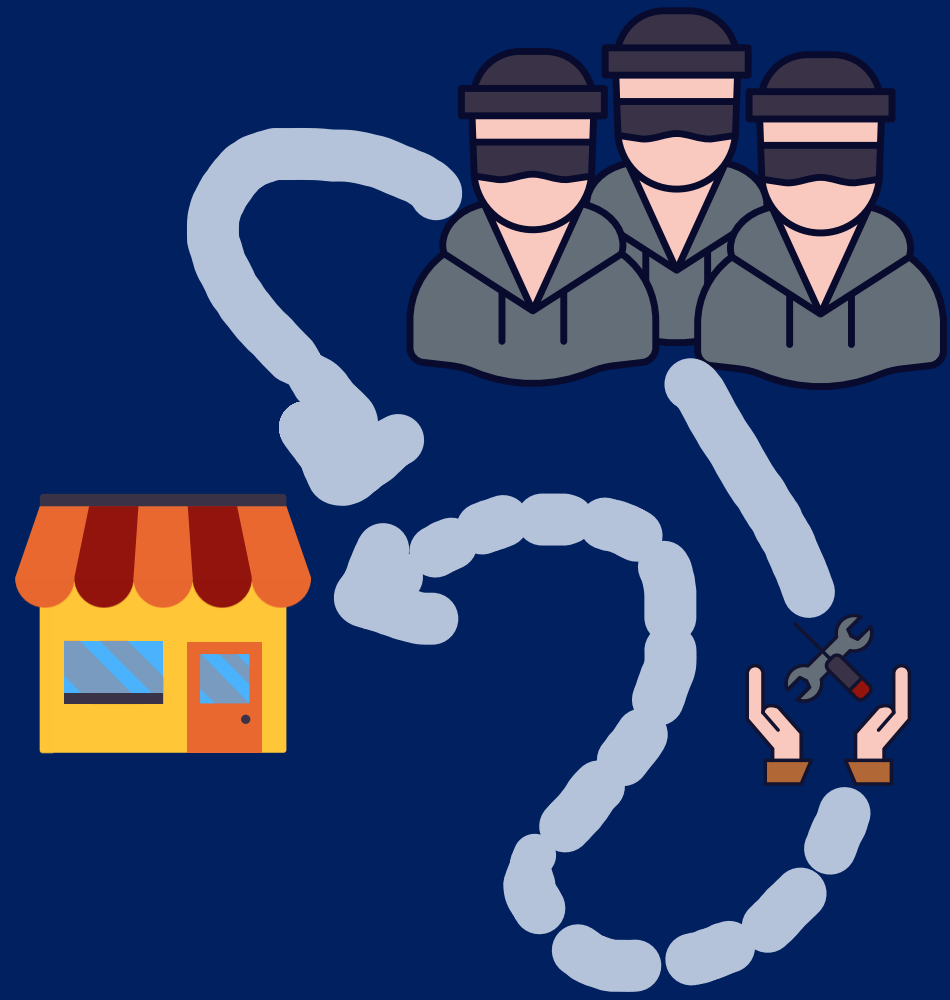
Businesses take measures to protect themselves from scammers. To make their anti-fraud strategy efficient, organizations must ensure they accept legitimate transactions only and provide instant user authentication. Once these operations are organized, you can achieve frictionless customer experience while minimizing the risk of fraud-related losses.

A fraud detection and prevention system is the core of any fraud risk management strategy. Teams choose software with functionality that works best for their workflow and business needs in general.



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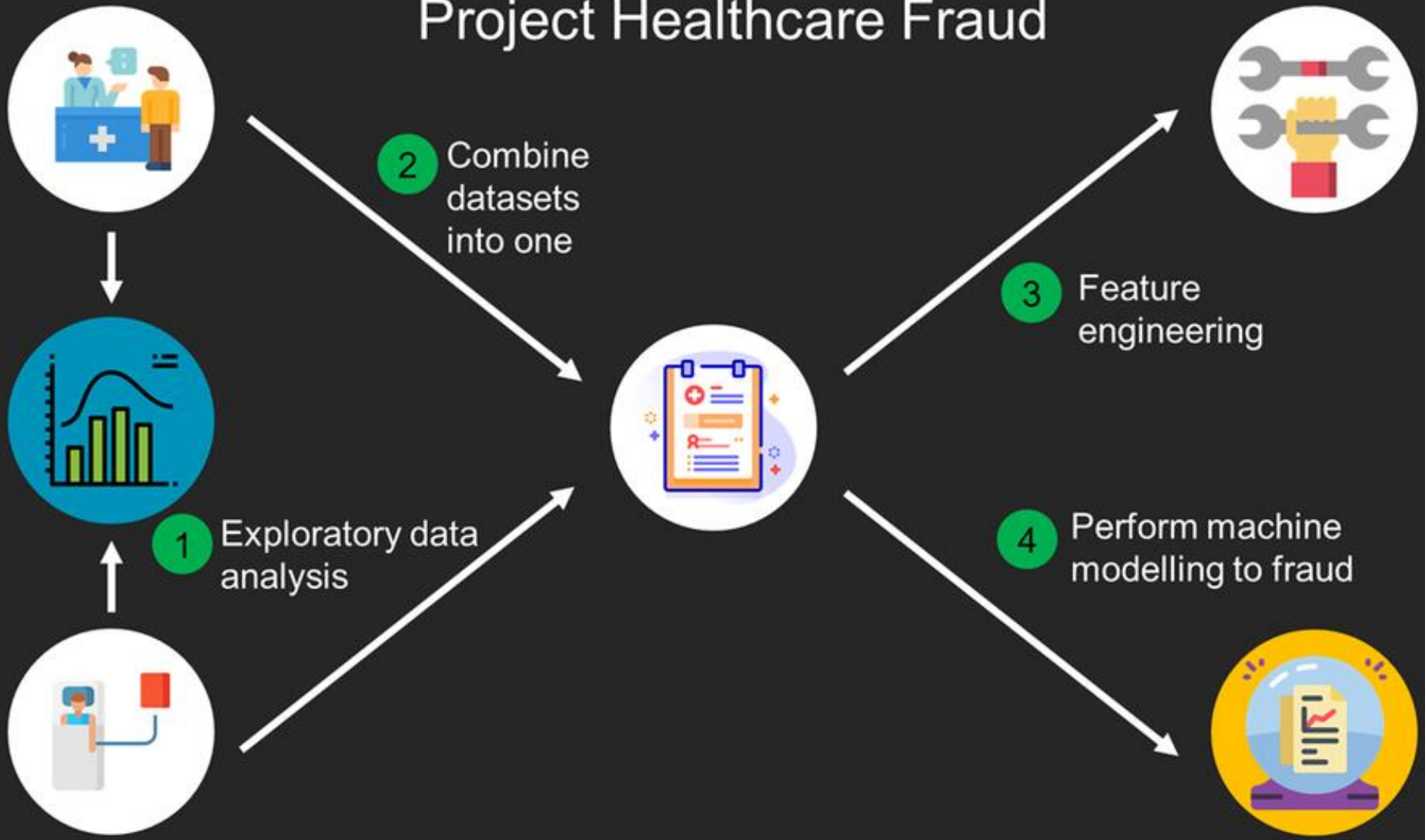
Project Healthcare Fraud



Use cases

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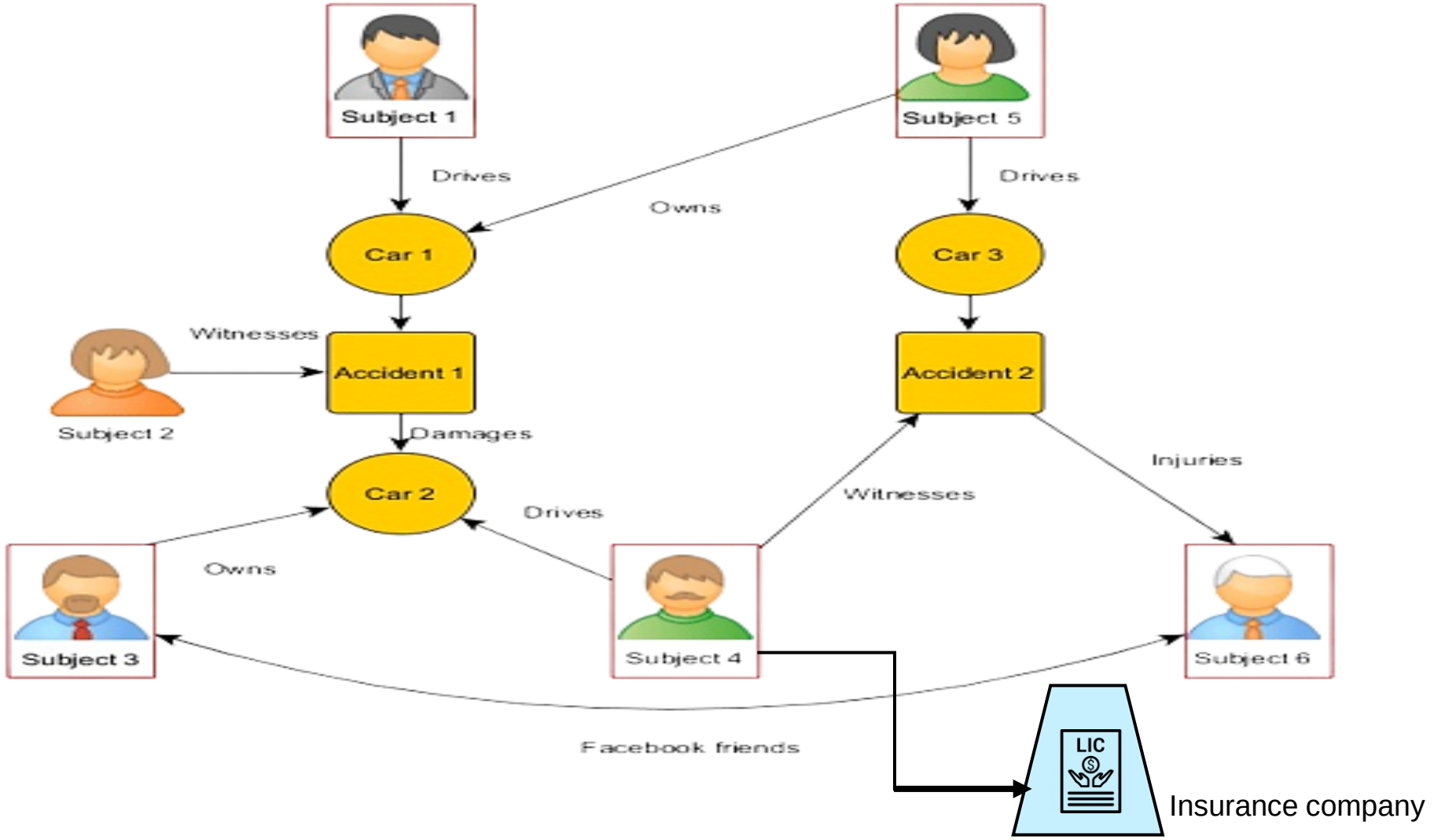

Target Segment

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Elderly individuals

non-English speakers

- **The intended customer or target is** typically financial institutions, such as banks and credit card companies, as well as e-commerce businesses and any other organizations that process financial transactions. These businesses use fraud detection systems to identify and prevent unauthorized transactions, such as credit card fraud, money laundering, and other types of financial crimes.
- The market for fraudulent detection systems is expected to grow at a significant rate in the coming years. Factors such as the increasing instances of fraud, growing adoption of advanced technologies, and government regulations mandating the use of such systems are driving the market growth. According to a report by MarketsandMarkets, the global fraud detection and prevention market size is expected to grow from USD 16.8 billion in 2020 to USD 32.8 billion by 2025, at a CAGR of 14.5% during the forecast period.

immigrants

auction site users

Online shoppers

Job seekers

Small business owners

Individuals facing financial hardship

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Industry	Suspected fraud percentage change from India	Top type of fraud globally
Largest percentage increases		
Financial services	88.50%	True identity theft
Telecommunications	18.54%	True identity theft
Travel & leisure	11.57%	Credit card fraud
Largest percentage declines		
Gaming	-34.03%	Gold farming
Logistics	-13.17%	Shipping fraud
Retail	-4.19%	Promotion abuse

Top suspected digital fraud rate attempts ...

Fraud Detection And Prevention Market Report

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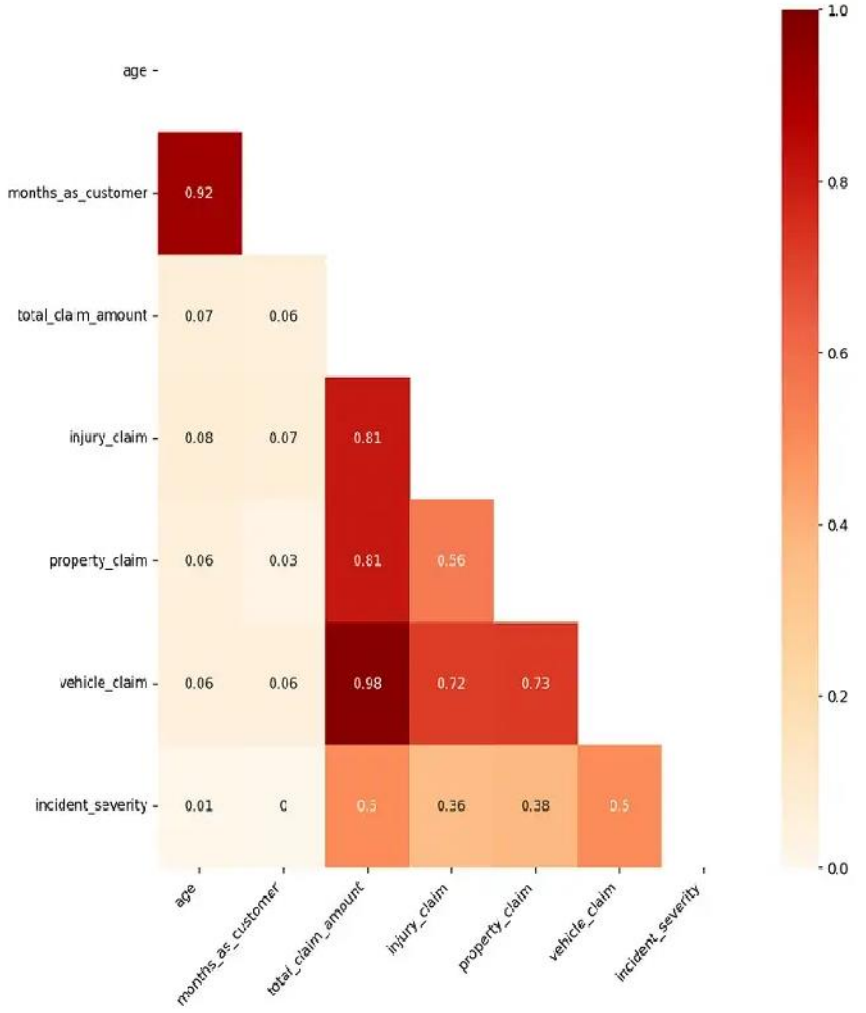
Report Attribute	Details
Market size value in 2021	USD 23.0 billion
Revenue forecast in 2028	USD 62.7 billion
Growth rate	CAGR of 15.4% from 2021 to 2028
Base year for estimation	2020
Historical data	2016 - 2019
Forecast period	2021 - 2028
Quantitative units	Revenue in USD million/billion and CAGR from 2021 to 2028
Report coverage	Revenue forecast, company ranking, competitive landscape, growth factors, and trends
Segments covered	Component, solutions, services, application, organization, vertical, region
Regional scope	North America; Europe; Asia Pacific; Latin America; MEA
Country scope	U.S.; Canada; U.K.; Germany; China; India; Japan; Brazil; Mexico
Key companies profiled	Total System Services, Inc.; Software AG; SAS Institute, Inc.; SAP SE; Oracle; IBM; Fiserv, Inc.; Experian plc; Equifax, Inc.; BAE Systems; ACI Worldwide, Inc.



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Solution Details

Solution Details

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About Dataset : ----------

For the purpose of this project, we are considering Inpatient claims, Outpatient claims and Beneficiary details of each provider. Let's s see their details :

A) Inpatient Data (This data provides insights about the claims filed for those patients who are admitted in the hospitals. It also provides additional details like their admission and discharge dates and admit d diagnosis code.)

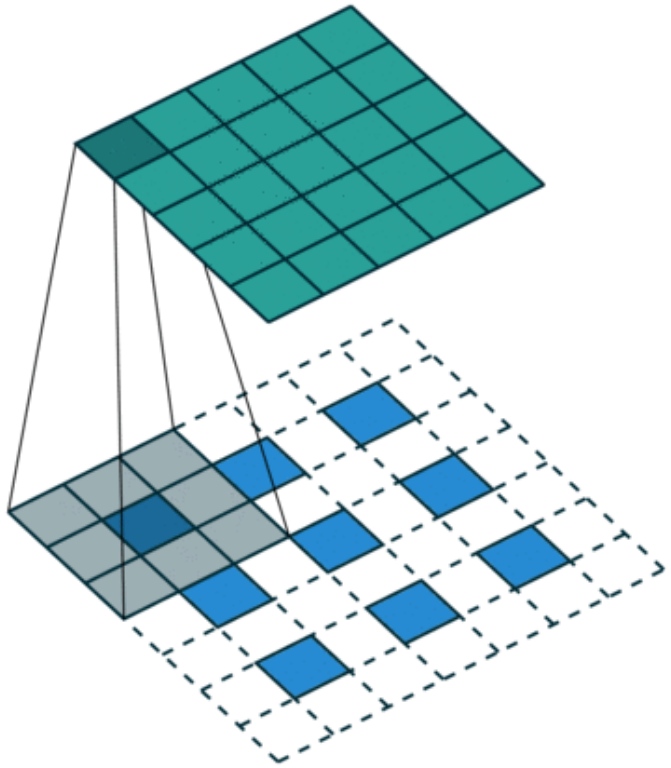
B) Outpatient Data (This data provides details about the claims filed for those patients who visit hospitals and not admitted in it.)

C) Beneficiary Details Data (This data contains beneficiary KYC details like health conditions, ergoregion they belong to etc.)

Solution Details

MODEL USED :

Autoencoders



Solution Details

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Autoencoders :

- Autoencoders have been successful in detecting medical fraud in studies, achieving high accuracy rates.
- Autoencoders can learn complex relationships and identify anomalous data, helping to reduce financial losses associated with medical fraud.
- They can be trained on various data types, enabling the identification of patterns not easily visible to humans.
- Autoencoders are more effective than traditional methods that rely on simple rules.

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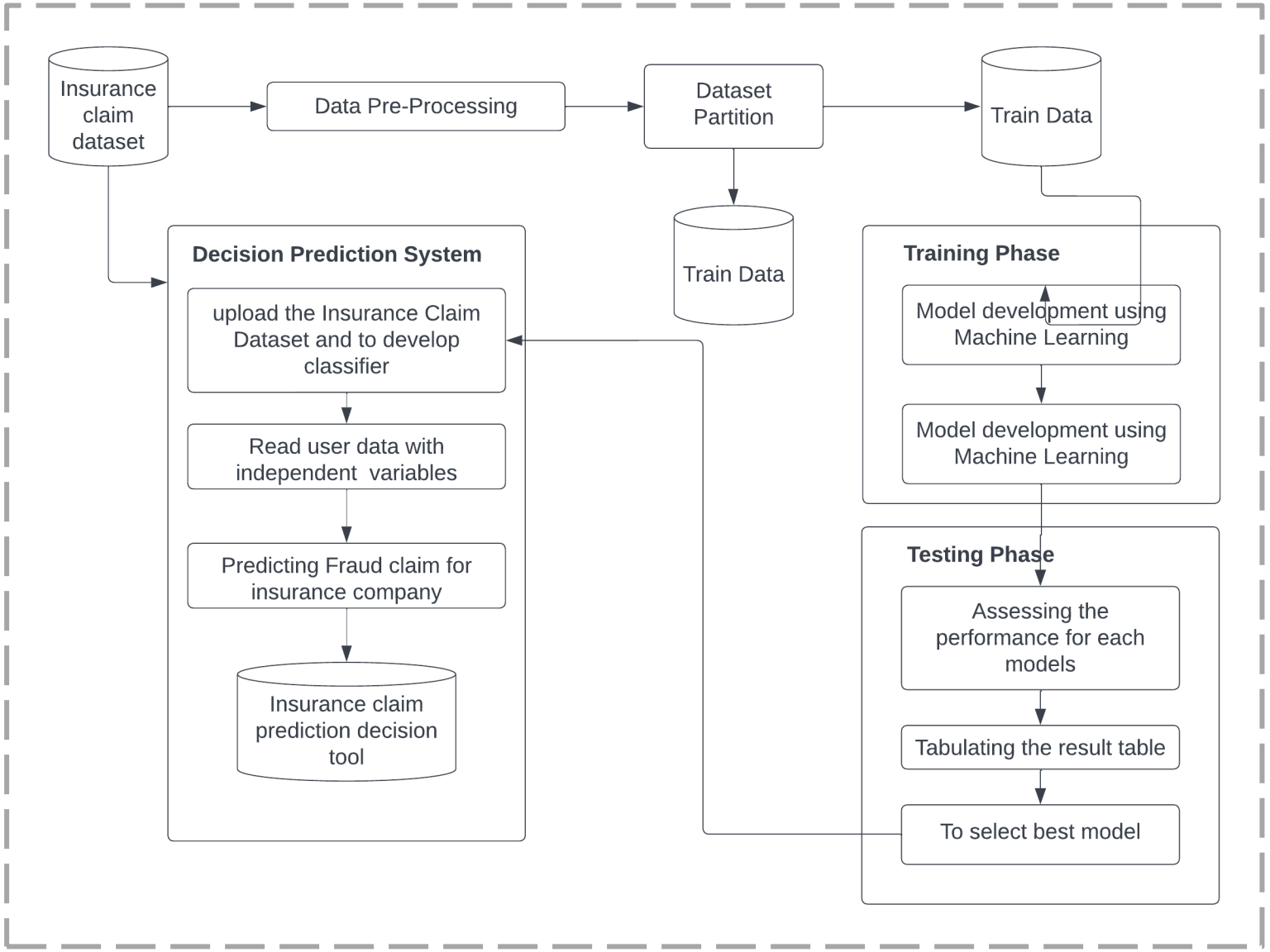

Data Model Architecture

Here the following Diagram shows the flow of data (raw format) to various processes the model does to vigorously train itself and be ready to use on the real world dataset of insurance companies.

What makes us better:

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Continuous improvement: With the ability to continuously learn and adapt, the model's performance and accuracy can be improved over time.

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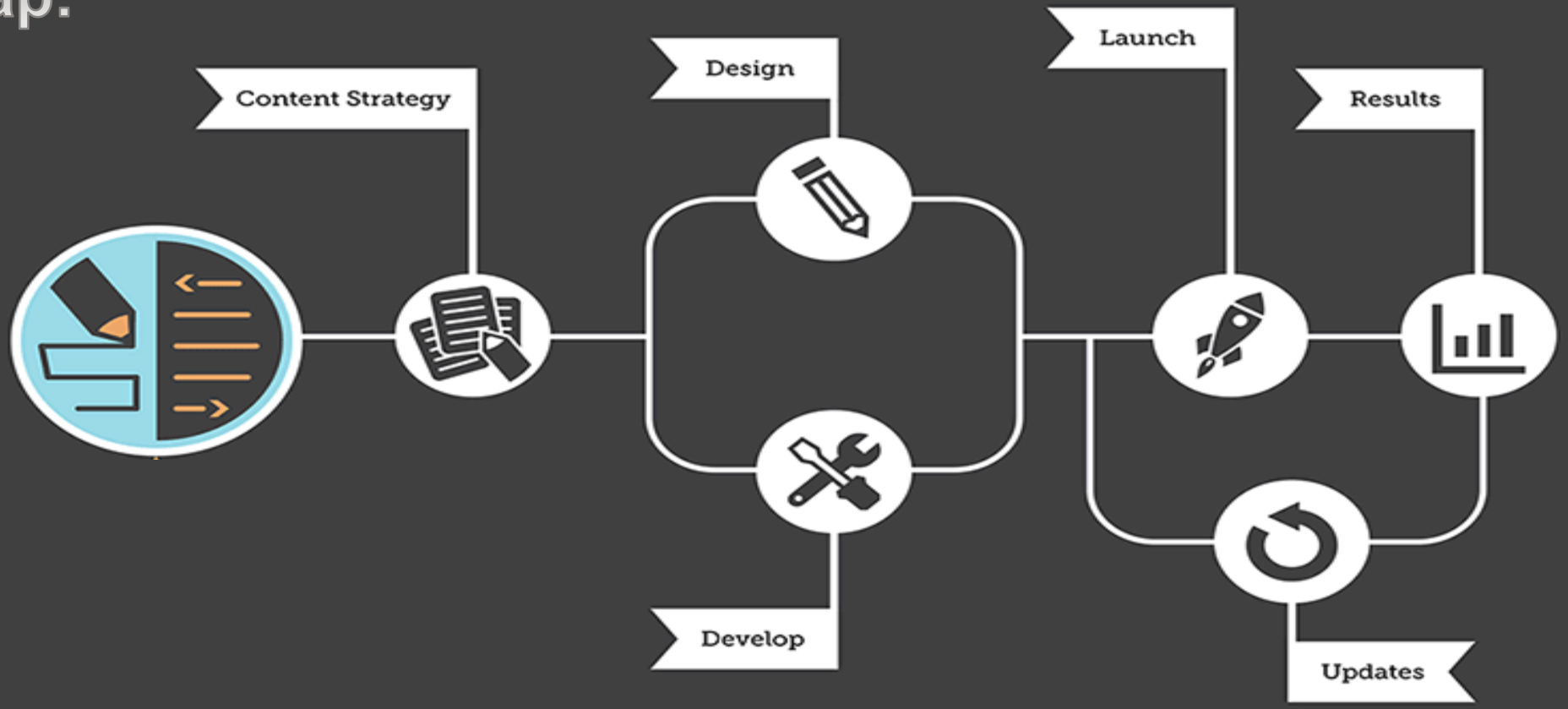
Future Readiness

Solution Roadmap

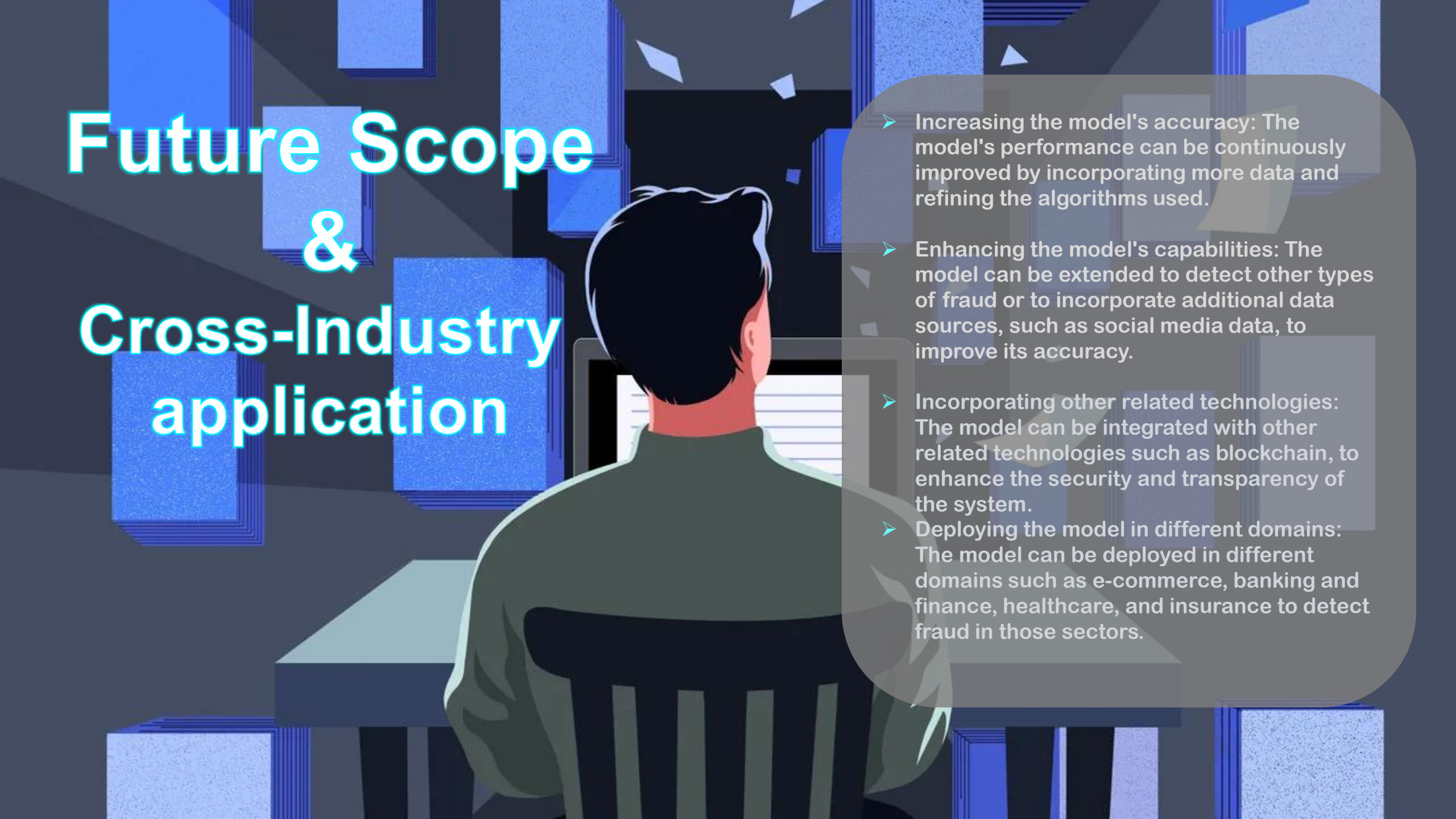
Cross-Industry application

Solution Roadmap:



How we Hope to move Forward

Future Scope & Cross-Industry application



- Increasing the model's accuracy: The model's performance can be continuously improved by incorporating more data and refining the algorithms used.
- Enhancing the model's capabilities: The model can be extended to detect other types of fraud or to incorporate additional data sources, such as social media data, to improve its accuracy.
- Incorporating other related technologies: The model can be integrated with other related technologies such as blockchain, to enhance the security and transparency of the system.
- Deploying the model in different domains: The model can be deployed in different domains such as e-commerce, banking and finance, healthcare, and insurance to detect fraud in those sectors.

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About the Team

- Amit Yadav
- Prateek Kumar Singh
- Anand Gupta

Team Members

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Amit Yadav
1st degree connection1st
NIET'24 | 3★ codechef | Amazon MLSS'22 | Microsoft FRT'22 | AI/ML Developer | Blockchain Enthusiast | Open-Source Contributor | SIH'22 | Winner 🏆 PDS Hacathon | python R java solidity

Prateek Kumar Singh (Cse(ai)) 3rd year
Erp-0201csai099
Expertise – Computer Vision, deep learning
Project Contribution – Developing API support interface for software and data analytics.

Anand Gupta (Cse(ai)) 3rd year
Erp-0201csai107
Expertise – Computer Vision, deep learning
Project Contribution – Developing email sender with attachment of violation capture by camera feed for alert system.

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Thank You