
AWS
re:Invent
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WPS302-R

Identify improper payments with analytics and ML

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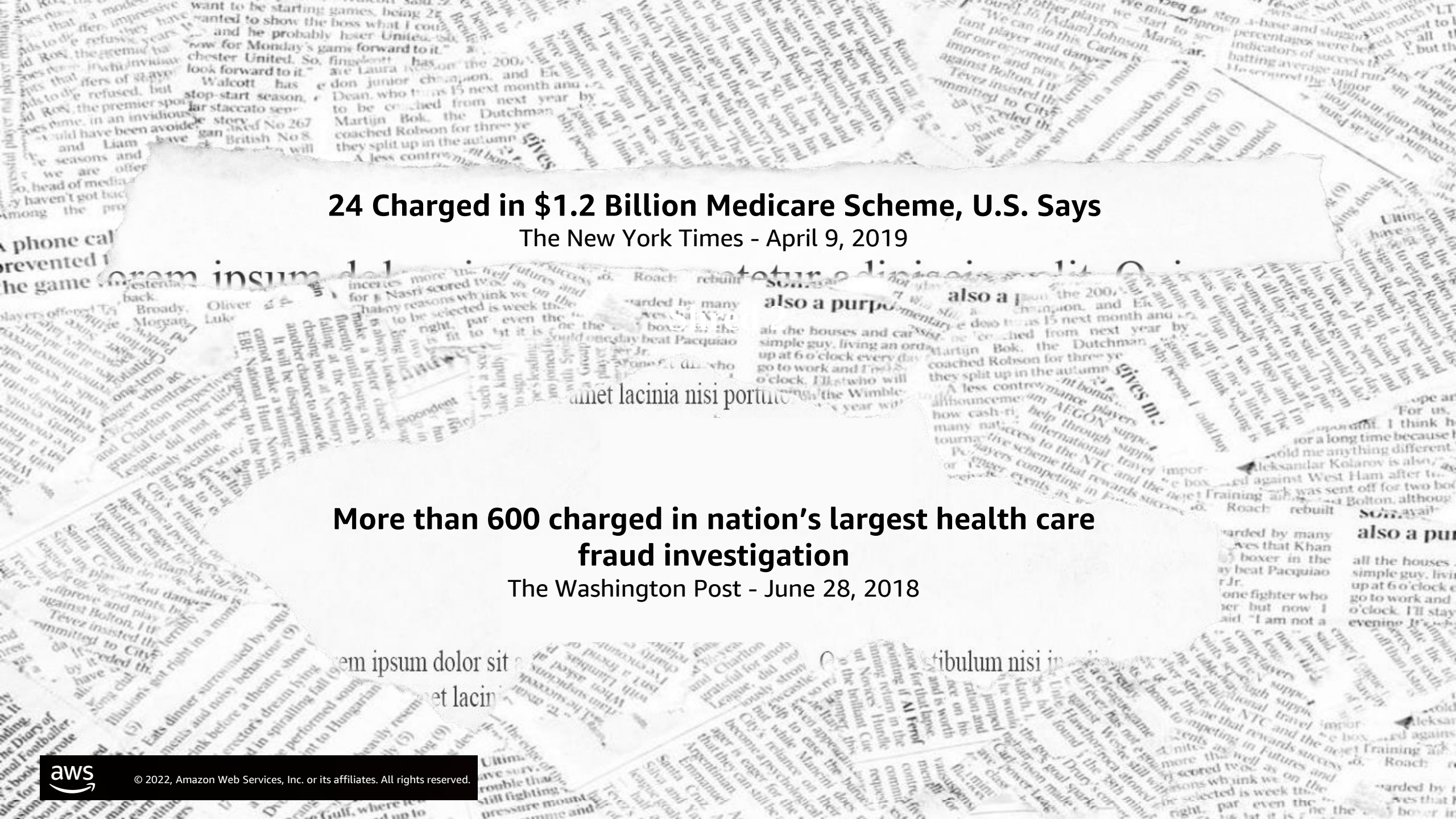
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Agenda

- Problem background
- Customer examples
- Solution types
- Workshop demo
- Call to action

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24 Charged in $1.2 Billion Medicare Scheme, U.S. Says

The New York Times - April 9, 2019

More than 600 charged in nation's largest health care fraud investigation

The Washington Post - June 28, 2018

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Customer examples



The Maryland Department of Human Services (DHS) developed a first-in-the-nation human services platform using AWS

This platform now supports multiple state agencies to share health data across organizations, verify data integrity, and reduce the risk for abuse of state service

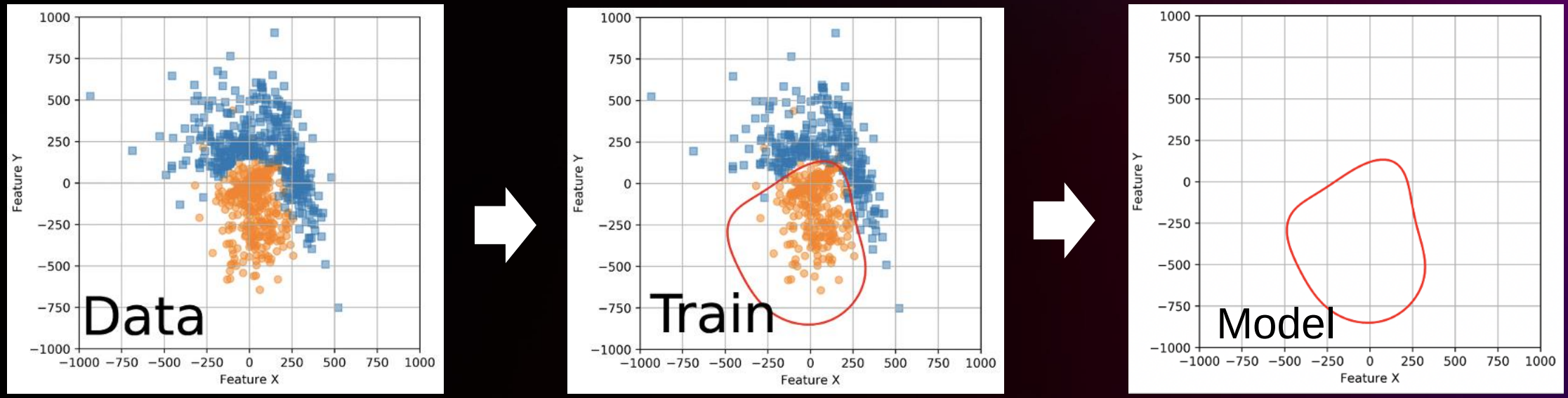


The Financial Industry Regulatory Authority (FINRA) uses the AWS Cloud to scale to meet both the volatility and size of the US financial markets

FINRA's big data platform now holds more than 30 petabytes of data, and analyzes 135 billion market events per day for fraudulent activity

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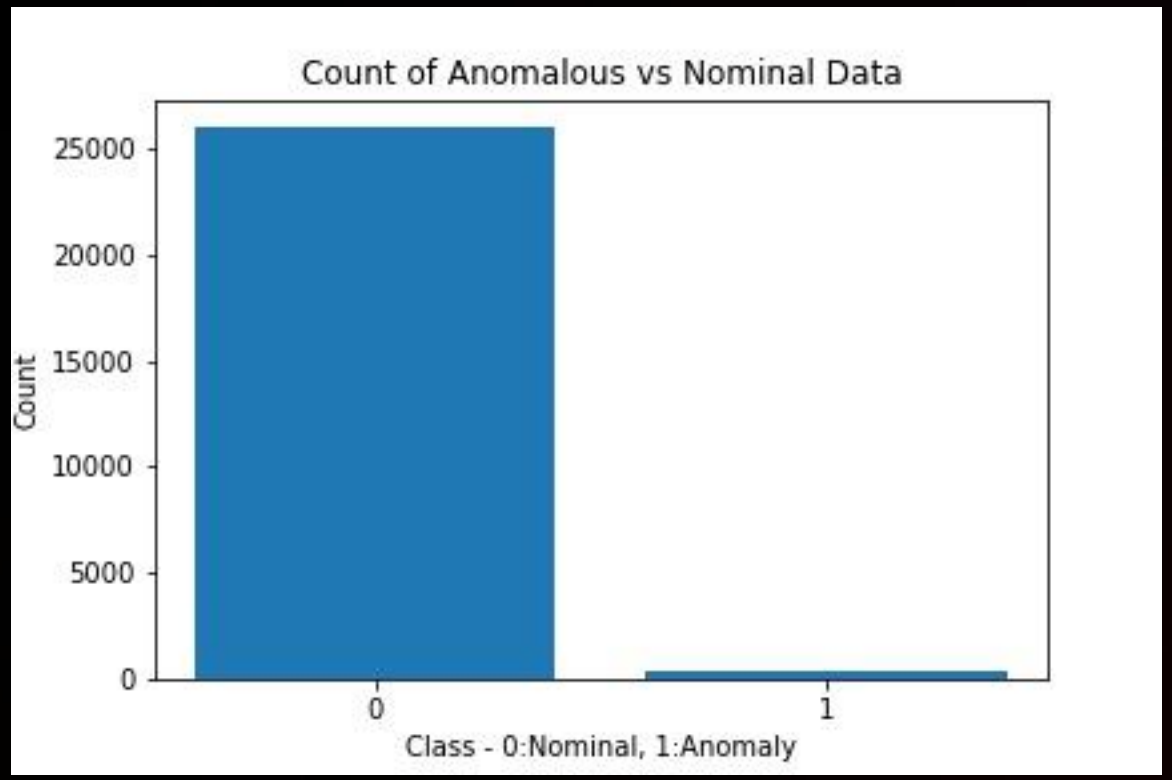
Solution type - Classification



1. Historical data is labeled with two classes: anomalous and nominal
2. The model is trained to classify records into each class
3. New records are scored by the model

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How to deal with imbalanced datasets



- Collect more data
- Choose correct evaluation metric
- Under/over-sampling techniques
- Synthetic data
- Different algorithms

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Solution type - Clustering

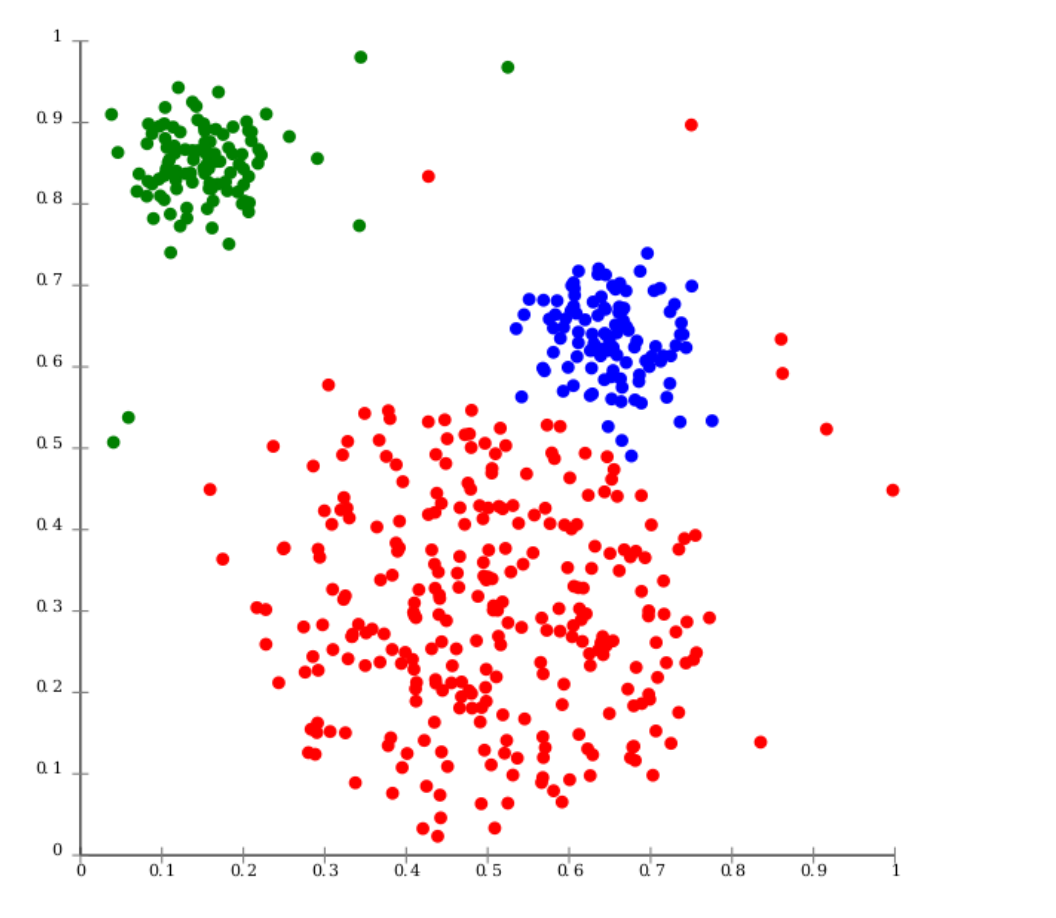


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- Unsupervised learning
- Grouping similar objects near each other
- Goal is for anomalous data points to cluster away from nominal data

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Workshop

http://bit.ly/3u2xsdx

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Call to action

- GitHub Code Repository:
  http://bit.ly/3gC4bUe



- Amazon SageMaker documentation
  https://go.aws/3eofkqC



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Thank you!

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