
Fraud Busters: Financial Security for Xente

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Meet the Fraud Busters



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About Xente



- A B2B digital payments platform, based in Uganda
- Stakeholders from all walks of life submit transactions via Xente
- Multi channel payment service

The digital account that powers your business

Get the digital account that simplifies payments and automates finance for 500+ smart businesses in Africa: Multi-currency accounts, Visa cards, mobile money, bank transfers, spend management, and more – all in one

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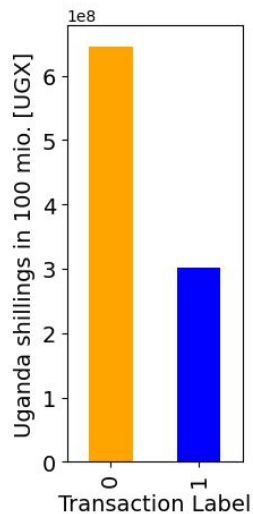
► [How it works](#)



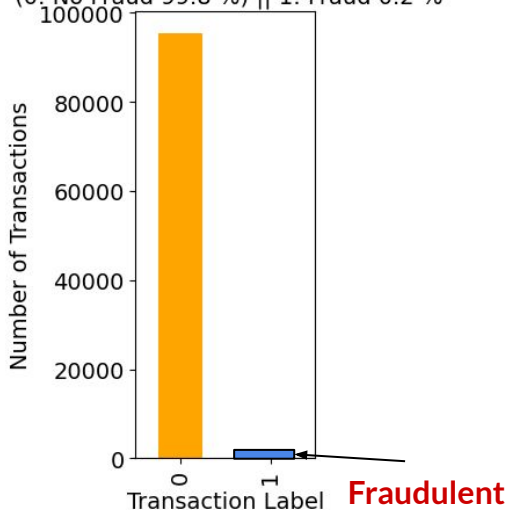
Xente's Challenge: Detecting Fraud

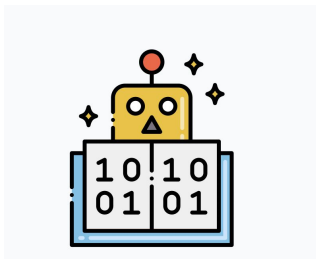
- Fraud damages Xente's trust among B2B service users as it is detrimental to their customers
- Assigning human resources to fraud detection doesn't scale due to the high number of transactions
- Need systems that can maximise productivity without reducing prediction quality
- Xente's brand perception is at risk, if this challenge is not addressed

Total sum of regular vs. fraudulent transactions



Distribution of regular and fraudulent transactions (0: No Fraud 99.8 %) || 1: Fraud 0.2 %

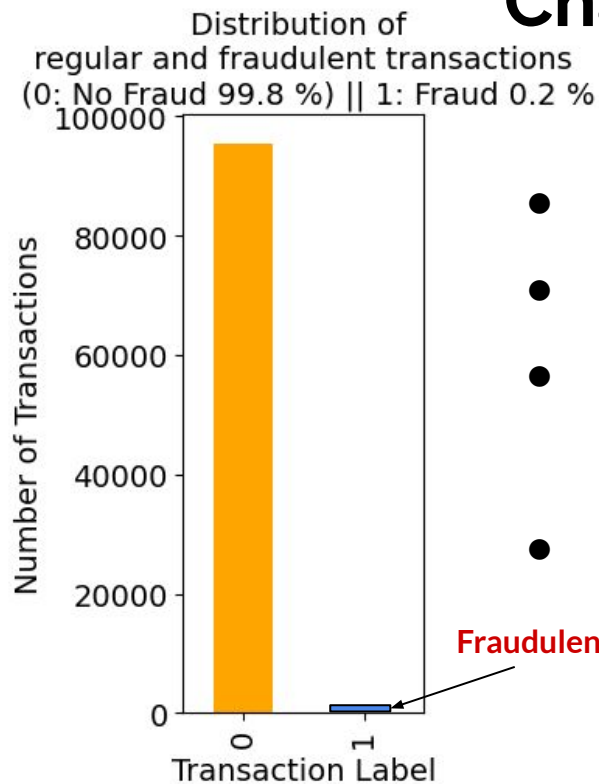




Proposed Solution

- Training and testing five different industry standard classification algorithms
 - Using machine learning to identify the best classification model for Xente's needs
 - Creating a model to accurately classify fraudulent transactions on our stakeholders platform
-

Challenge: Imbalanced Data



- Only 0.2 % fraudulent transactions
- Adds risk of missing many fraudulent transactions
- Don't want the model to learn that most transactions are non-fraudulent — should identify the pattern instead
- Requires resampling

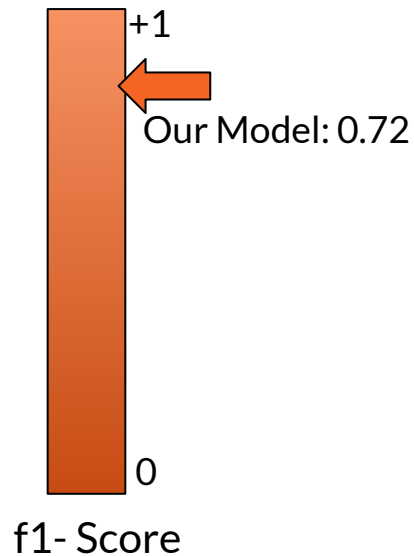
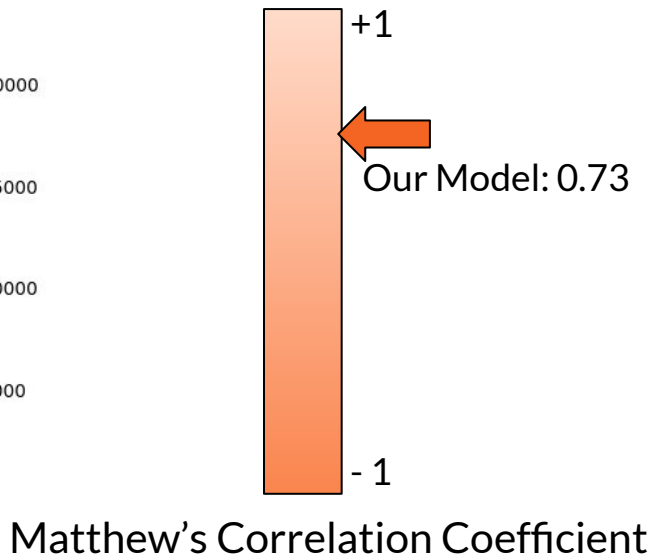
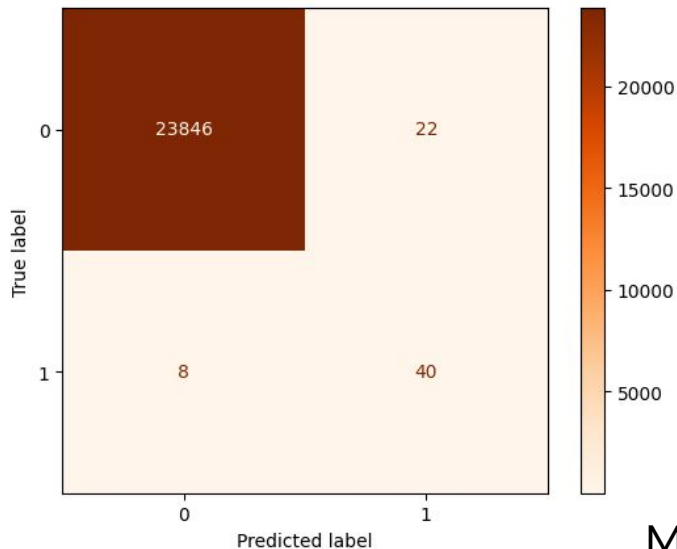
The Dataset and our Approach

Recording time	Nov 15 2018 - Feb 13 2019
# of transactions	95,662
Known fraudulent transactions	193

We used the SMOTE NC toolkit to synthetic upsampling, to make our imbalanced dataset usable for machine learning

To classify the performance of model the **F1 Score**, as well as **Matthews Correlation Coefficient**, were used.

Findings & Model Performance



Value

Our fraud detection project for Xente Tech Ltd provides an added value for the company by deterring criminal activities and reducing cost caused by fraud.

Implementing the measures we propose will prevent damages to Xente and its stakeholders, improving Xente's brand perception by providing a more secure service and an enhanced customer experience.

Recommendations

- Xente should adopt our model to deter criminal activities and improve transaction security
- Improve brand perception sustainably by mitigating criminal transactions
- Continue improving iteratively — we have a robust system of metrics to measure improvements

Future work

We found potential patterns in the data that would lead to better prevention of financial fraud. It would take additional project time and resources to investigate this and better predict these leads.

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