Improving Verification of Refund Claims on GrabFood

A Data-Centric Approach

Group 1 - Yohanes Wiguna | Nathan Tang En Ci | Kenneth Chan Jian Da | V Divya | Olivia Tang Shu Hui | Wang Yilin | Jiankai Chan

GrabFood: Real life and current problem

mothership GE2025 NEWS LIFESTYLE POLITICS EARTH WORL

News

S'pore food delivery rider pretends to spill food at void deck to likely avoid completing delivery

Caught in 4K.

Belmont Lay | May 09, 2025, 04:22 PM

mothership

PROBLEM

Inaccurate and slow verification of refund claims on GrabFood has led to poor customer and merchant satisfaction

Customers complain of refused refunds despite “real” missing orders

r/singapore • 1 yr. ago
mr-teo

Increase in Grabfood service failures but Grabfood refuses refund

Discussion

Have been using Grabfood since the Covid days. But recently I have been having an increased in service issues with Grabfood.

18/9/2023 - Ordered a black pepper cheese fillet o fish but received a normal fillet o fish. Grab refunded the cost of the wrong item.

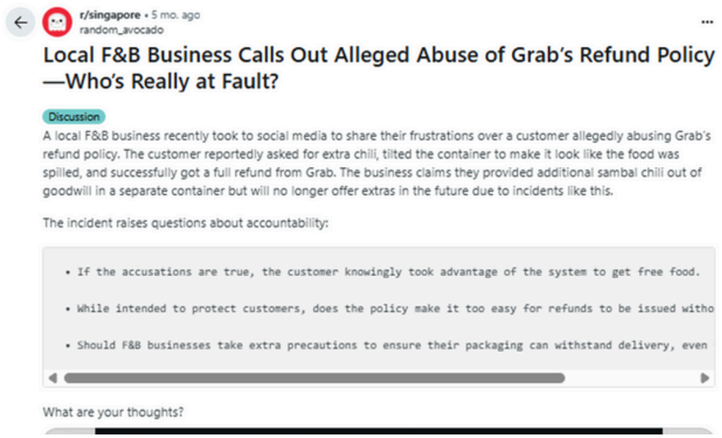
Complaint Singapore
Zaharah Hamid · 3 August 2024 ·

Grab

There are several occasions that the vendors which I ordered from, either gave me the wrong orders or has a missing item which I have paid for it.

Last night, when I ordered for dinner I have a missing item which has been paid yet you will not refund me back my money for something which I did not receive in the first place and I have to bare the cost myself???

Merchants complain of customers abusing Grab’s refund policy



r/singapore • 5 mo. ago
random_avocado

Local F&B Business Calls Out Alleged Abuse of Grab’s Refund Policy —Who’s Really at Fault?

Discussion

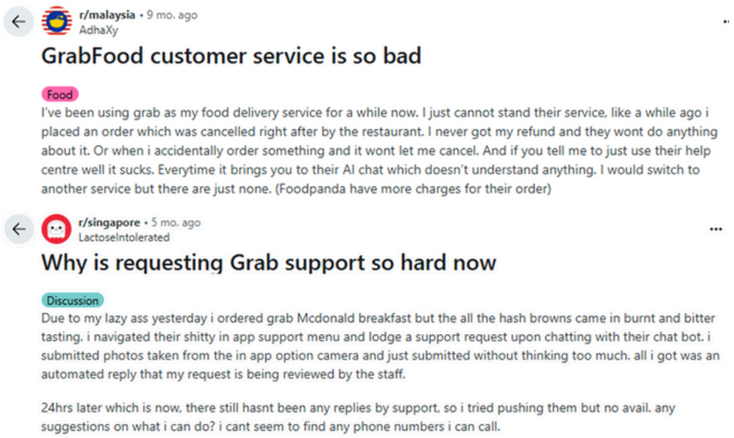
A local F&B business recently took to social media to share their frustrations over a customer allegedly abusing Grab's refund policy. The customer reportedly asked for extra chili, tilted the container to make it look like the food was spilled, and successfully got a full refund from Grab. The business claims they provided additional sambal chili out of goodwill in a separate container but will no longer offer extras in the future due to incidents like this.

The incident raises questions about accountability:

- If the accusations are true, the customer knowingly took advantage of the system to get free food.
- While intended to protect customers, does the policy make it too easy for refunds to be issued witho
- Should F&B businesses take extra precautions to ensure their packaging can withstand delivery, even

What are your thoughts?

Users complain of slow response rate for GrabFood support in refunds



r/malaysia • 9 mo. ago
AdhaXy

GrabFood customer service is so bad

Food

I've been using grab as my food delivery service for a while now. I just cannot stand their service, like a while ago i placed an order which was cancelled right after by the restaurant. I never got my refund and they wont do anything about it. Or when i accidentally order something and it wont let me cancel. And if you tell me to just use their help centre well it sucks. Everytime it brings you to their AI chat which doesn't understand anything. I would switch to another service but there are just none. (Foodpanda have more charges for their order)

r/singapore • 5 mo. ago
LactoseIntolerated

Why is requesting Grab support so hard now

Discussion

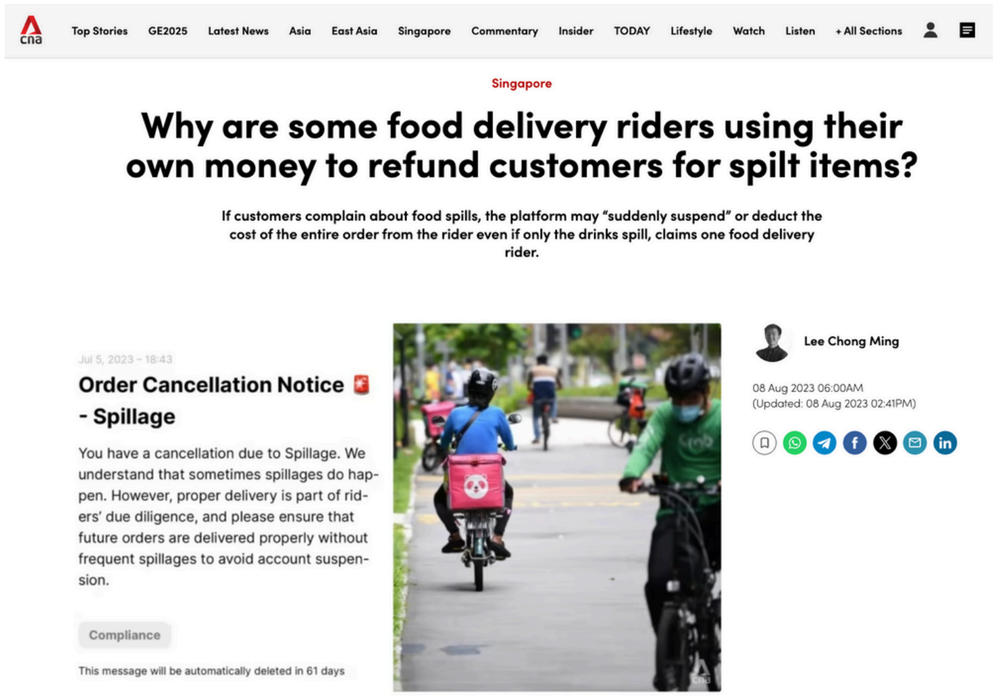
Due to my lazy ass yesterday i ordered grab Mcdonald breakfast but the all the hash browns came in burnt and bitter tasting. i navigated their shitty in app support menu and lodge a support request upon chatting with their chat bot. i submitted photos taken from the in app option camera and just submitted without thinking too much. all i got was an automated reply that my request is being reviewed by the staff.

24hrs later which is now, there still hasnt been any replies by support, so i tried pushing them but no avail. any suggestions on what i can do? i cant seem to find any phone numbers i can call.

PROBLEM

Grab's corporate reputation is also at risk and Grab needs to take steps to manage this

Media has reported that riders are charged for missing orders, for which Grab has received flak



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Singapore

Why are some food delivery riders using their own money to refund customers for spilt items?

If customers complain about food spills, the platform may "suddenly suspend" or deduct the cost of the entire order from the rider even if only the drinks spill, claims one food delivery rider.

Jul 5, 2023 – 18:43

Order Cancellation Notice - Spillage

You have a cancellation due to Spillage. We understand that sometimes spillages do happen. However, proper delivery is part of riders' due diligence, and please ensure that future orders are delivered properly without frequent spillages to avoid account suspension.

Compliance

This message will be automatically deleted in 61 days

Lee Chong Ming

08 Aug 2023 06:00AM
(Updated: 08 Aug 2023 02:41PM)

A screenshot of a compliance warning for food spills in the foodpanda rider app (left) and a photo of delivery riders. (Image: Mr Teo; File photo: CNA)

Grab's competitors have taken steps actively to manage this risk

How is Deliveroo safeguarding restaurants?

A Written by Ash H
Updated over 2 years ago

At Deliveroo, we work hard to ensure our partners feel happy and safe using our platform. On occasion, like many other businesses, we experience 'bad actors' that use our platform for fraud and abuse. We're continually evolving our systems to detect this activity to benefit our partners.

For example, our systems look at:

- Customers that claim more regularly than usual
- Customers that claim for a high value order
- Customer evidence that is not relevant
- Locations that claim more regularly than usual
- Suspected fraudulent claims by new customers
- Customers attempting to create multiple accounts

Where we suspect customers may be submitting fraudulent claims, compensation is not given.

PROBLEM

We aim to improve the verification of refund claims to reduce costs while maintaining customer and merchant satisfaction

	Customer Satisfaction	Merchant Satisfaction	Costs
Extreme 1: Grab pays for all refund claims by default	**High**	**High**	**High**
Extreme 2: Merchant pays for all refund claims by default	**High**	**Low**	**Low**
Extreme 3: Customer does not get any refund claims	**Low**	**High**	**Low**
Current Practice: Selective refund based on assessment of likelihood of false claims	**Moderate**	**Moderate**	**Moderate**
Proposed Way Ahead: Improving the accuracy of verification of refund claims	**High**	**High**	**Low**

OBJECTIVE

Our verification process is currently solely dependent on customer's claim history and "claim evidence"

1

Customer submits a refund request with a description and a photograph supporting claims

- Customer places a GrabFood Order
- Customer receives a problematic order
- Customer submits a form for a refund
- Customer submits a picture of their order or any other photographic evidence
- Customer receives the refund if the claim is verified
- Customer is not refunded if the claim is not verified

2

Grab checks against customer's history and claim evidence to decide on refund

- Grab checks the customer's history and refund frequency to assess the validity of the complaint
- Grab verifies the completeness of evidence provided, such as photos, videos, or medical certificates, to validate the consumer's complaint
- Grab decides whether to refund the customer and charge the merchant, or not to refund the customer
- Grab decides whether to refund the merchant upon receipt of appeal

3

Merchant is charged by default unless customer is a frequent claimer, but can submit appeal

- Merchant delivers the order to the customers
- Merchant is notified of the refund claim and charges
- Merchant can submit an appeal on the GrabMerchant application alongside with evidence to dispute the refund
- Merchant's refund will be aborted if the appeal is approved

CURRENT PROCESS

We propose to adopt data analytic methods to improve our refund verification process

Collect Data on Previous Claims

- Customer Data
- Merchant Data
- Rider Data
- Transaction Data

Train Machine Learning Model

- Clustering
- Multivariate Regression
- Oversampling
- Supervised Machine Learning

Adopt Model for Decision-Making

- Process Customer Refund Claims
- Process Merchant Appeals
- Apply Business Improvement

OVERVIEW

We propose to start with Singapore and gradually expand country by country

Aim

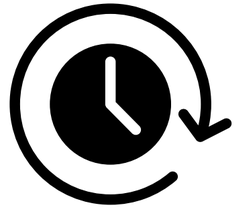
To train a machine learning model to classify whether a refund claim is genuine or fraudulent

Territory

Begin with Singapore which has a high customer saturation, and gradually expand to other countries

Execution

Use data from Grab App and augment with additional analysis of existing data and data sources



Duration

Use up to past 24 months of data to ensure sizeable data set and account for differences in behaviour across months

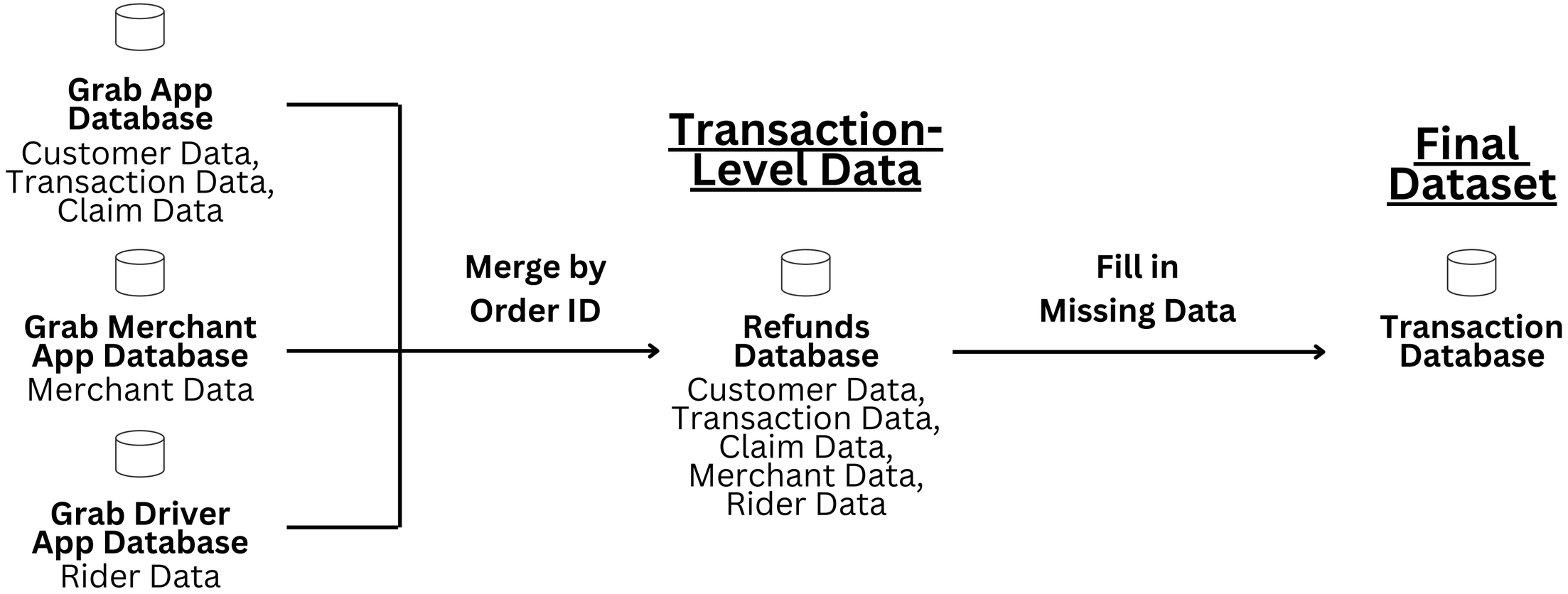
DATA COLLECTION

We require transaction-level data, which is available through our various apps

Customer Data	Merchant Data	Rider Data	Transaction Data	Claim Data
• Age • Gender • Home Location • Monthly Expenditure on Grab • Number of Previous Refund Claims • Payment mode • Star rating	• Merchant Location • Number of Employees • Number of Outlets • Food Category • Monthly Sales on Grab • Food Preparation Time • Number of Previous Refund Claims • Star rating	• Age • Gender • Delivery Location • Monthly Earnings on Grab • Photo Submission • Delivery Time • Number of Previous Refund Claims • Star rating	• Food Type • Meal Type • Transaction Value • Transaction Date/Time	• Claim Submitted • Claim Reason • Claim Value • Time Between Delivery and Claim Submission • Photo Submission • Appeal Submitted • Appeal Outcome

DATA COLLECTION

After gathering the data, we will merge the data by Order ID and fill in the missing data



DATA CLEANING

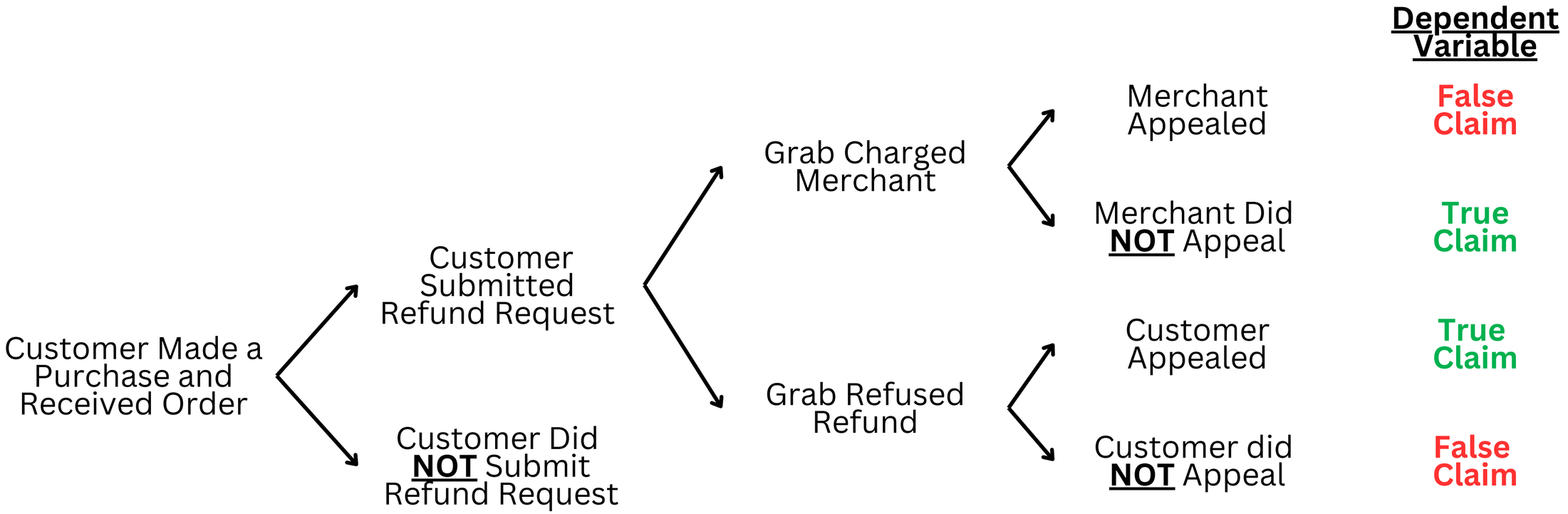
We will also transform the data into a range of various data types for analysis

Data Type	Customer Data	Merchant Data	Rider Data	Transaction Data	Claim Data
Continuous	• Age • Monthly Expenditure on Grab • Number of Previous Refund Claims • Star rating	• Number of Employees • Number of Outlets • Monthly Sales on Grab • Food Preparation Time • Number of Previous Refund Claims • Star rating	• Age • Monthly Earnings on Grab • Delivery Time • Number of Previous Refund Claims • Star rating	• Transaction Value	• Claim Value • Time Between Delivery and Claim Submission
Dummy	• Gender	• Food Category	• Gender • Photo Submission	• Food Type • Meal Type • Transaction Date/Time	• Claim Submitted • Claim Reason • Photo Submission • Appeal Submitted • Appeal Outcome
Synthesise	• Home Location - Convert to District	• Merchant Location - Convert to District	• Delivery Location - Convert to District		

DATA CLEANING

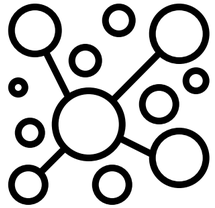
Dependent variable will be based on whether customer and merchant appealed previous decisions

- Lack of counterfactual in determining whether refund request was actually accurate
- This definition of dependent variable also meets the business intent of minimising customer and merchant appeals, which is more closely correlated to better customer and merchant satisfaction



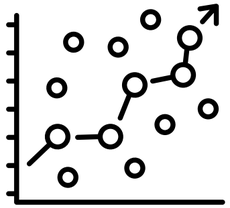
DATA CLEANING

We will first use clustering to identify customer, merchant, rider and transaction clusters, for use in further analysis



Identify Clusters

Identify clusters in customer, merchant, rider and transaction groups separately using list of independent variables



Add Cluster Number

Add cluster number as an independent variable for each transaction based on the customer, merchant, rider and transaction

Use Cluster Number

Use cluster number as an independent variable in future multivariate regression analysis and machine learning

CLUSTERING

We will then run multivariate regression to understand the impact of each variable on the dependent variable

1. Calculate Variance Inflation Factor to check for multicollinearity
2. Run multivariate linear regression on all independent variables
3. Remove independent variables with low statistical significance
4. Iterate until most independent variables demonstrate statistical signficance
5. Decide on key independent variables to use for subsequent machine learning

MULTIVARIATE REGRESSION

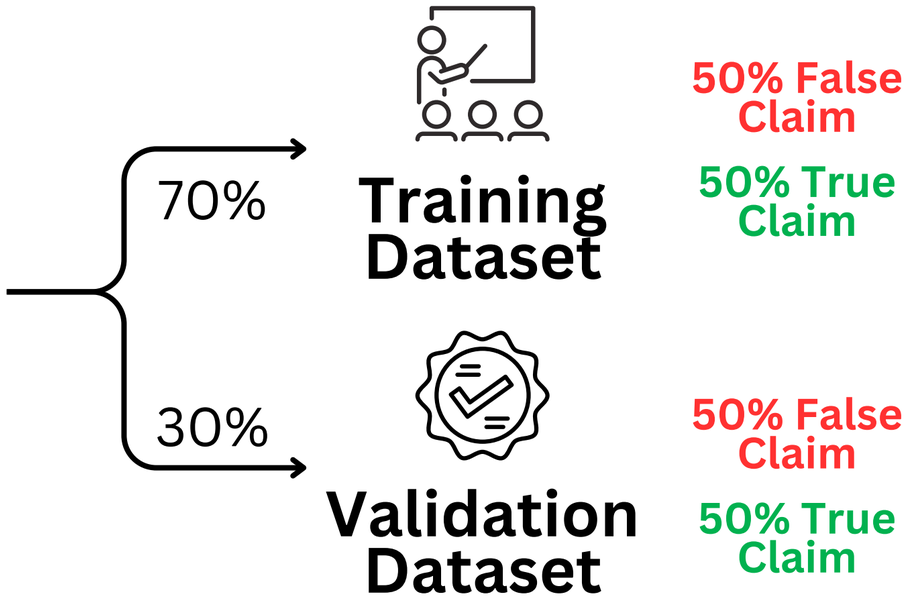
We will then conduct oversampling to ensure a more even dataset in terms of true and false claims

Key Problem: We expect few false claims within the dataset - suboptimal for machine learning

Order ID	Customer Data	Merchant Data	Rider Data	Transaction Data	Claim Data	Claim Nature
						1
						0
						1
						1
						1
						0
						1
						1
						0

False Claim = 1, True Claim = 0

Solution: Oversample false claims to form new training and validation sets



OVERSAMPLING

Finally, we will use supervised machine learning to develop a classification model

Datasets for Machine Learning

Training Dataset

50% False Claim

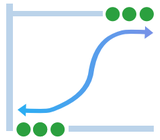
50% True Claim

Validation Dataset

50% False Claim

50% True Claim

Machine Learning Models



Logistic Regression

Decision Tree/ Random Forests

Key Performance Indicators

75% Accuracy

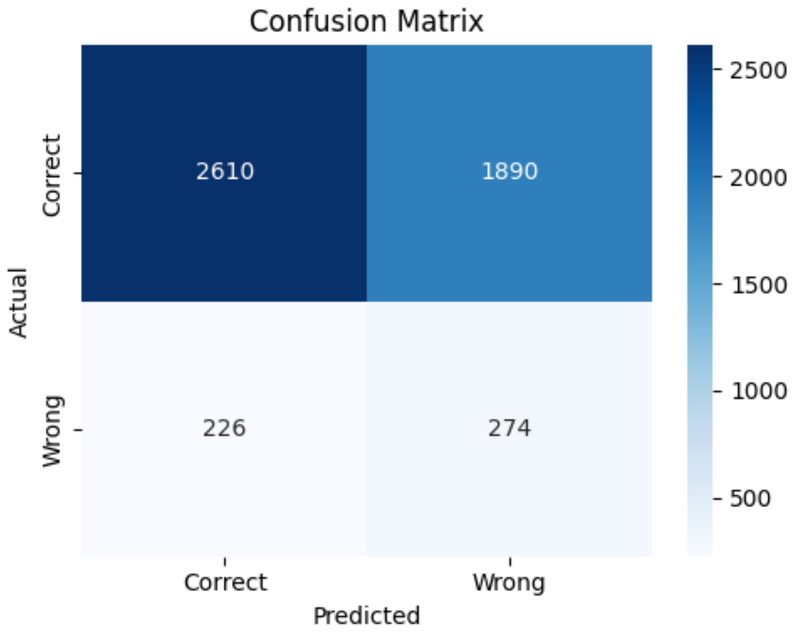
<1 Minute Decision Time

CLASSIFICATION

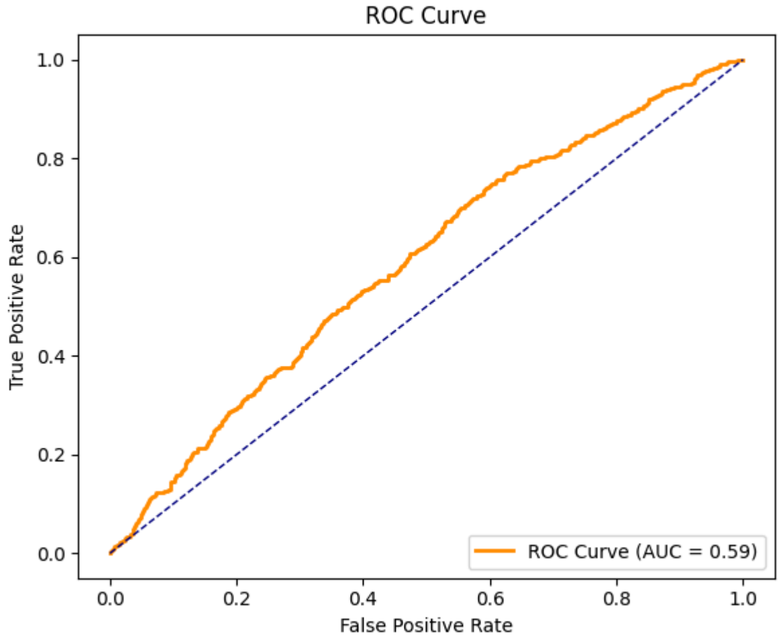
We have attempted to develop a model based on synthetic data, with some promising results

- Model accuracy is even more promising considering that this is based solely on randomised data

Model Accuracy of 58%



AUC Score of 0.59

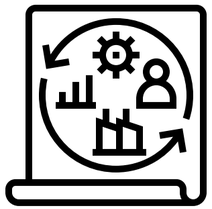


MODEL PERFORMANCE

With further refinements, we project that we could achieve an accuracy rate of 75%

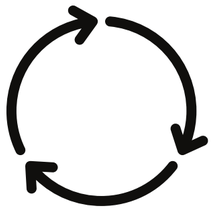
Enrich the Data

Such as: time features, geospatial data, users and riders behavorial, image metadata, aggregations



Use Additional Models

Such as: Random Forest, XGBoost, LightGBM - often ourperform linear models on heterogenous data



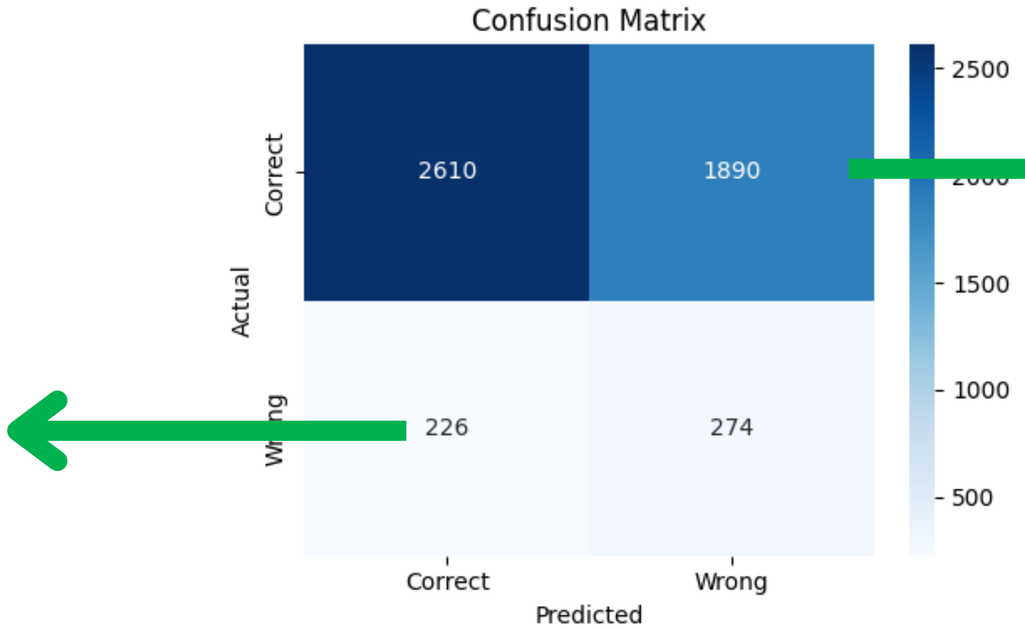
Zoom in on Key Factors

Identify top factors driving wrong predictions or surprising interactions, and drop irrelevant factors

MODEL PERFORMANCE

We can also adapt the model to either focus on maximising customer or merchant satisfaction

<u>Option 1</u>:
Minimise False Positives to Maximise Customer Satisfaction



<u>Option 2</u>:
Minimise False Negatives to Maximise Merchant Satisfaction

MODEL PERFORMANCE

With our model, we will need to review our business process that guides decision making on refunds

- In particular, we will need to decide the appropriate action at each level of predicted probability

Predicted Probability	Possible Action	Target Share	Operational Effect
≤ 20 % (Low)	Directly process the refund without any human verification	≈ 55 %	Process straightforward cases with zero time and costs
20–70 % (Medium)	One-click human verification (e.g., proof photo re-check)	≈ 35 %	Verify borderline cases with minimal time and costs
> 70 % (High)	Specialised team to investigate refund claims	≈ 10 %	Invest human time and effort to verify most difficult cases

BUSINESS PROCESS

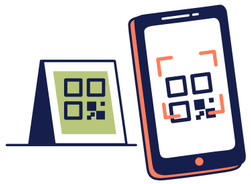
We will also need to review our business processes to manage residual false positives and false negatives

Key Issues	Expected Business Process	Identified By	Possible Additional Business Process
False Positives i.e., identified as false claim when actually true claim	Refuse refund to customers and continue to pay merchant	Customers appealing after being refused refund claim	• **Option 1**: Reverse decision for all appeal cases (lower customer/ merchant satisfaction, but with lower costs) • **Option 2**: Bear all costs of appeal cases (higher customer/ merchant satisfaction, but with higher costs)
False Negatives i.e., identified as true claim when actually false claim	Accord refund to customers and charge merchants	Merchants appealing after being charged for refund claim	

BUSINESS PROCESS

We can also improve the model and the business process iteratively to reduce the number of false claims over time

Strategy / Recommendation:

	Measure	Description	Rationale
	Implement Tamper-Evident QR-Seal Packaging for Merchants	Provide merchants with low-cost, disposable tamper-evident QR-coded seals that riders scan on pickup and again at delivery	Provides additional data points for the model and directly discourage in-transit tampering of food
	Launch a Merchant–Rider “Quality Scorecard”	Aggregate data into monthly scorecard with benefit scheme/incentives for the merchant and rider (eg. weekly bonus)	Rewards merchants and riders for behaviours that reduce the probability of false claims based on the model

BUSINESS RECOMMENDATION

With this, we expect cost savings for Grab of up to $7.3 million per year

2024 GMV	Refunds	False Claims	Savings
$11.7 Billion	**$585 Million**	**$29.2 Million**	**$7.3 Million**
Total Value of all Grabfood Deliveries in 2024	Value of Refunds (Assuming 5% of GMV)	Value of False Claims (Assuming 5% of Claims)	Cost Savings (Assuming 25% of False Claims)

COST-BENEFIT ANALYSIS

Thank You!

Group 1 - Yohanes Wiguna | Nathan Tang En Ci | Kenneth Chan Jian Da | V Divya | Olivia Tang Shu Hui | Wang Yilin | Jiankai Chan