# eCommerce Customer Service Satisfaction

## Categorisation

By Isabelle Thong Ru Yi

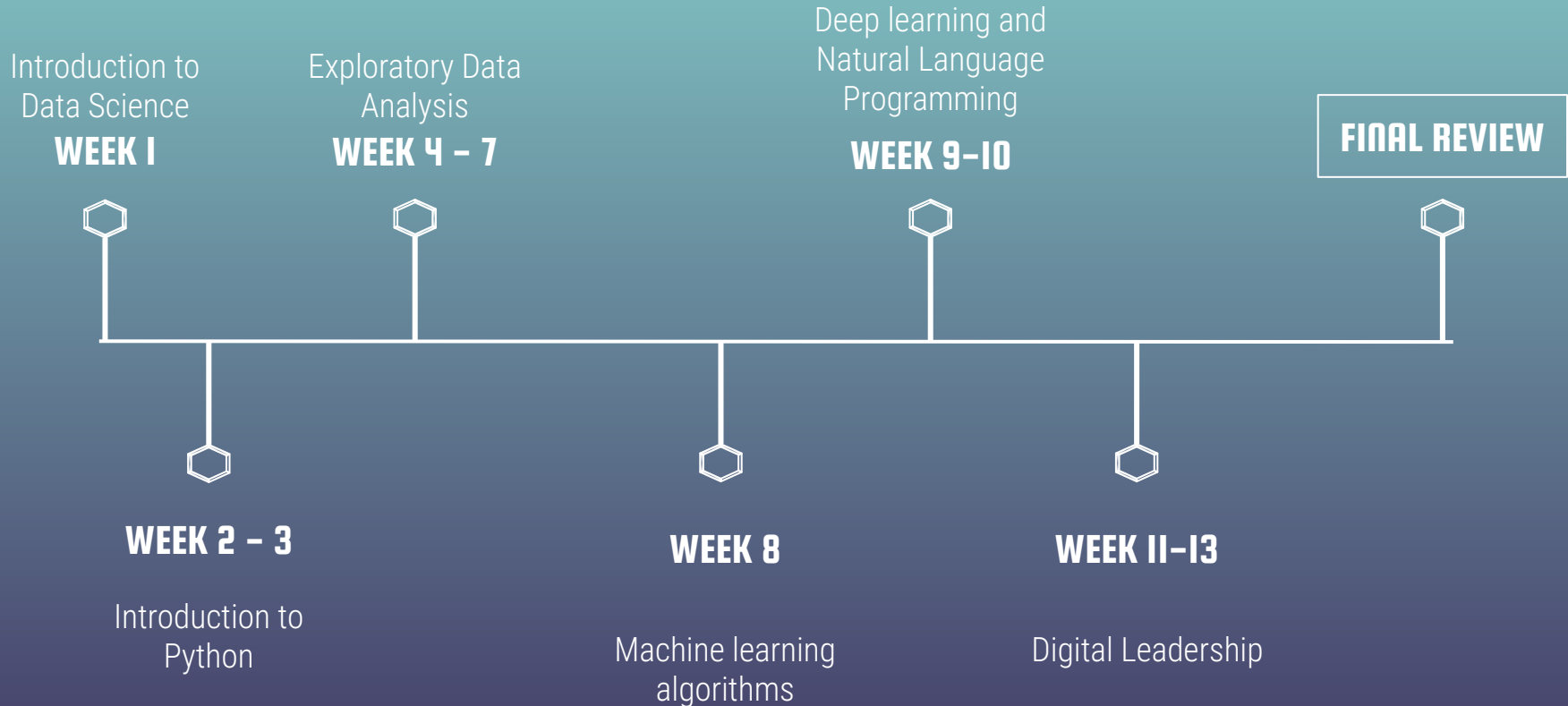# TABLE OF CONTENTS

# ABOUT ME

Universiti Sains Malaysia (USM),
Penang – Degree
SEP 2018 - SEP 2022
B.S. in Engineering Physics,
Minor in Astronomy

Production Executive - Insulflex,
Bangi

Career objective: Data Scientist

# COURSE OVERVIEW

Introduction to
Data Science
**WEEK 1**

Exploratory Data
Analysis
**WEEK 4 – 7**

Deep learning and
Natural Language
Programming
**WEEK 9–10**

**FINAL REVIEW**

**WEEK 2 – 3**

Introduction to
Python

**WEEK 8**

Machine learning
algorithms

**WEEK 11–13**

Digital Leadership

# Current State Analysis

Shopzilla is facing high cost for customer acquisition, which affects it's profit. Study shows that customer lifetime value is directly proportional to the retention rate. A 5% increase in customer retention can produces more than 25% increase in profit.

# OBJECTIVES

Improve customer service quality

Enhance overall customer satisfaction

Increase customer retention

# DATASET

| | data type | #missing | Duplicate | #unique |
|---|---|---|---|---|
| Unique id | object | 0 | 0 | 85907 |
| channel_name | object | 0 | 0 | 3 |
| category | object | 0 | 0 | 12 |
| Sub-category | object | 0 | 0 | 57 |
| Customer Remarks | object | 57165 | 0 | 18231 |
| Order_id | object | 18232 | 0 | 67675 |
| order_date_time | object | 68693 | 0 | 13766 |
| Issue_reported at | object | 0 | 0 | 30923 |
| issue_responded | object | 0 | 0 | 30262 |
| Survey_response_Date | object | 0 | 0 | 31 |

| | data type | #missing | Duplicate | #unique |
|---|---|---|---|---|
| Customer_City | object | 68828 | 0 | 1782 |
| Product_category | object | 68711 | 0 | 9 |
| Item_price | float64 | 68701 | 0 | 2789 |
| connected_handling_time | float64 | 85665 | 0 | 211 |
| Agent_name | object | 0 | 0 | 1371 |
| Supervisor | object | 0 | 0 | 40 |
| Manager | object | 0 | 0 | 6 |
| Tenure Bucket | object | 0 | 0 | 5 |
| Agent Shift | object | 0 | 0 | 5 |
| CSAT Score | int64 | 0 | 0 | 5 |

Data source:
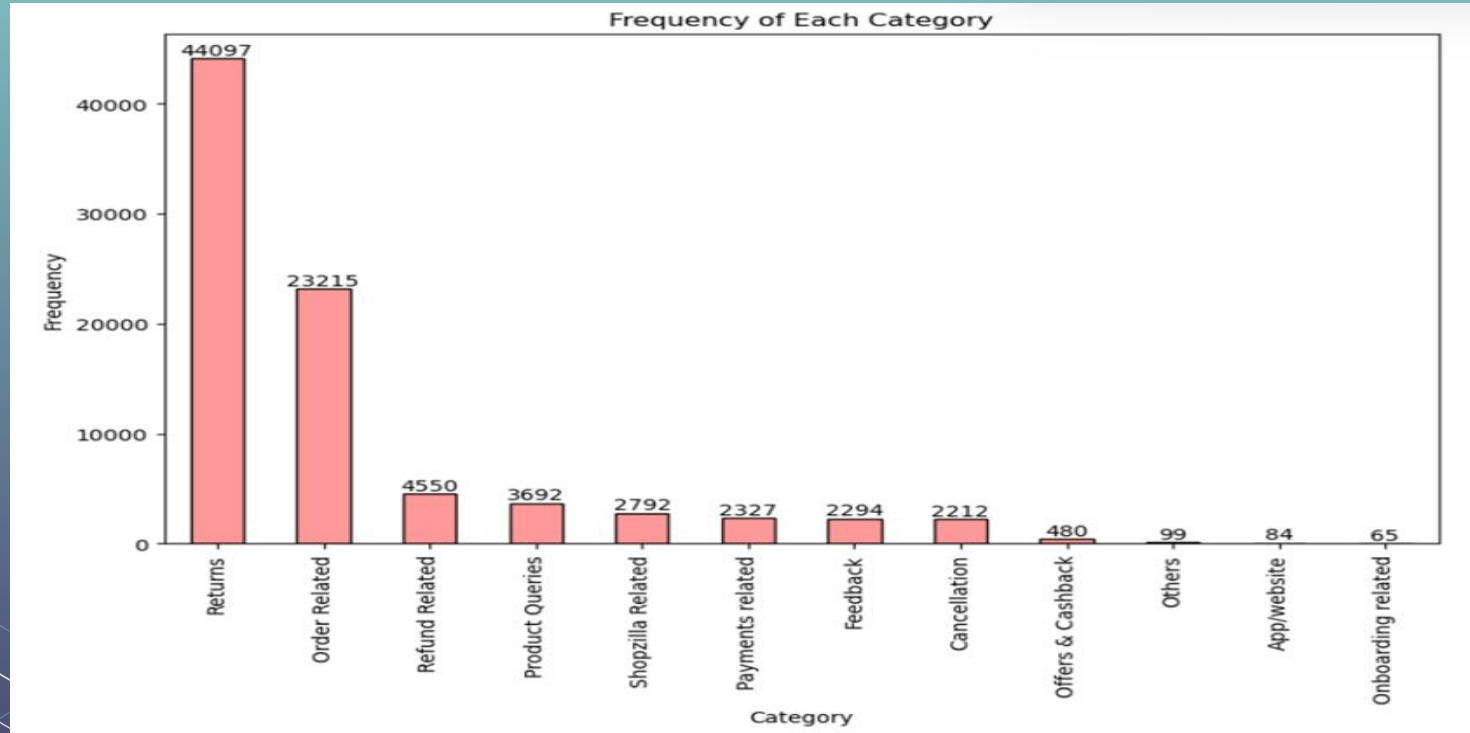https://www.kaggle.com/datasets/ddosad/ecommerce-customer-service-satisfaction?resource=download

# TECHNOLOGY STACK

# DATA VISUALISATION
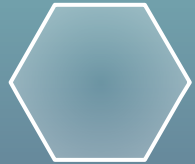
# PROPOSED SOLUTION

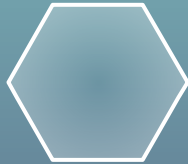Integration with Customer Service Platforms

# PROPOSED SOLUTION

**Collecting data**

**Model**

**Predictions**

**Integration**

Data from customer

Analyze the data and make predictions

Determine suitable actions

# BUDGET

| Role \ Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Hours/week | Total Hours | Total Cost ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project Manager | Plan, Project oversight, Closure | | | | | | | | | | | | 10 | 120 | 8400 |
| Data Scientist | | Model development | | | | | | | | | | | 20 | 120 | 7200 |
| Machine Learning Engineer | | | Model optimization | | | | | | | | | | 20 | 160 | 10400 |
| Software Engineer/Backend Dev | | | API development | | | | | | | | | | 20 | 160 | 9600 |
| DevOps Engineer | | | | | | Setup | | | Maintenance | | | | 15 | 90 | 5400 |
| Frontend Developer/UI/UX Designer | | | | | | Interface customization | | | | | | | 15 | 90 | 4950 |
| QA Engineer | | | | | | Testing | | | UAT | | | | 15 | 60 | 3000 |
| Customer Service Representative | | | | | | | | | Feedback | | | | 5 | 20 | 600 |
| | | | | | | | | | | | | | | 820 | 48550 |

# CONCLUSION

The model of this project is enhanced for accuracy
and it achieved an accuracy of **70%**

This model can be further improved by:

**Expand and Enhance Data Collection
Model Improvement
Personalization and Customization**

# THANK YOU