

# Customer Service Analysis

Using Natural Language Processing



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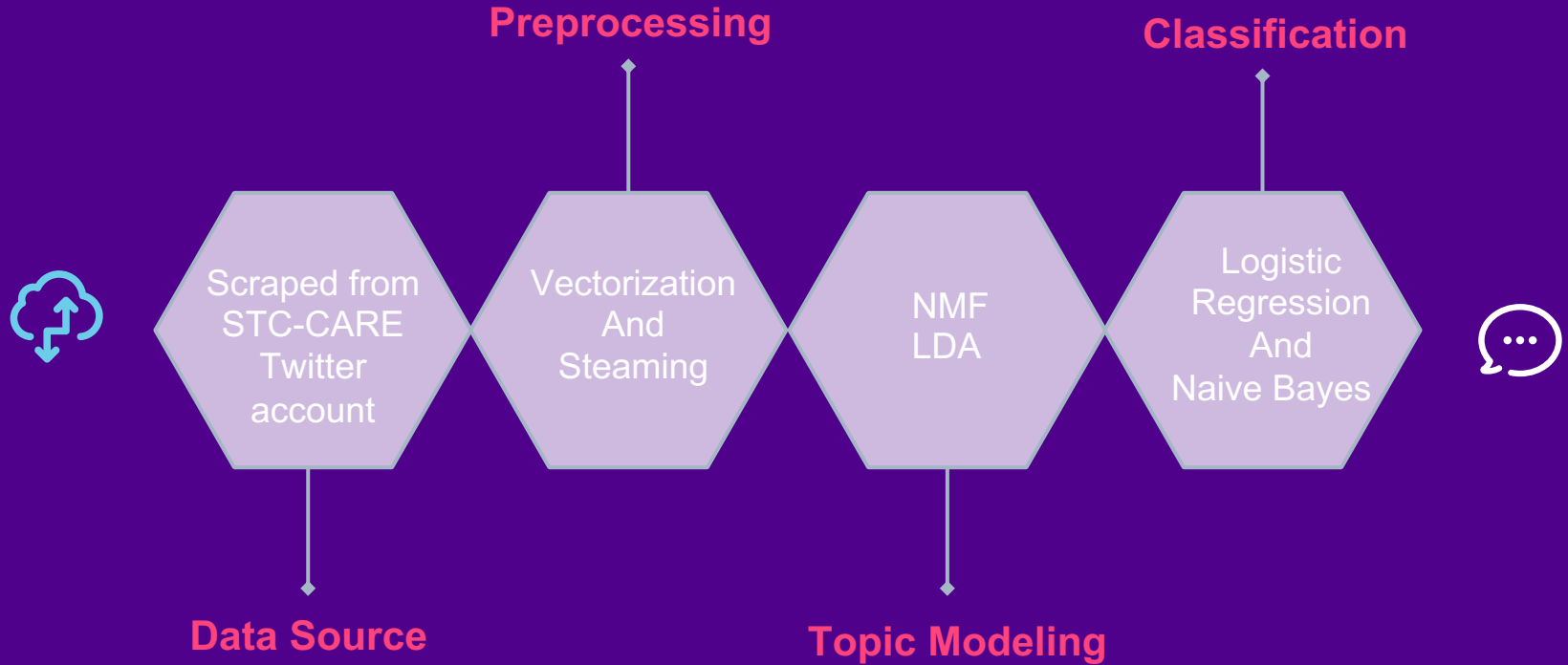
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# Introduction

Analysis of most common customer service challenges encountered by telecommunication company through Natural language processing, and unsupervised machine learning algorithm.



# Methodology



NMF with TF-IDF Vectorizer is our best topic modeling



Topics	Word1	Word2	Word3	Word4	Word5	Word6
سوء خدمة عملاء	الفساد	التلاعب	كذب	ماتردون	تأخرت	البلاغ
مشاكل التطبيق	يعلق	العطل	يتعطل	ما يشتغل	ردوا	تطبيقكم
الانترنت المنزلي	الفني	العطل	الألياف	النت	المعاناة	بوكسيه
تغطية الشبكة	الأبراج	الشبكة	الحي	تتعطل	التغطية	مختقية



# Classification



Model	Train	Validation
	Accuracy	Accuracy
Logistic Regression	84%	76%
Naive Bayes	60%	59%

# Insight

- Listen to customers and act on feedback.
- Ensure proper training and materials.
- AI model suggested that the tower point in this location is an ideal location to expand telecommunications infrastructure.





**T**hank you for your Listining

Any Questions 😊