



SYRIA-TEL CUSTOMER CHURN PREDICTION

Non-Technical Presentation
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Project Overview

This project aims to help the business understand and reduce customer churn by using machine learning models to predict which customers are likely to leave.

Business Understanding

- Customer churn has a direct impact on revenue.
- By predicting churn, we can proactively take action to retain high-risk customers.
- Reducing churn will improve long-term customer value.

Data Overview

- ❖ used customer data including:

- ❖ Contract type

- ❖ Monthly charges

- ❖ Tenure

- ❖ Internet service

- ❖ Payment methods

Data was cleaned, encoded, and prepared for modeling

Modeling Approach

I built 2 models as follows:

1. Logistic Regression (baseline): A simple, interpretable model to establish a performance benchmark.

2. Decision Tree:

- Baseline version
- Tuned version

Classification is appropriate here because our goal is to predict a category: whether a customer will churn (Yes/No).

Model Performance

I evaluated all models using accuracy, precision, recall, and ROC AUC.

Logistic Regression (Baseline):

Accuracy: 86.1%

Precision (Churn): 54%

Recall (Churn): 26%

ROC AUC: 0.81

Model Performance

Decision Tree (Baseline):

- Accuracy: 91.8%

Good on non-churners, but risk of overfitting.

Decision Tree (Tuned):

- Accuracy: 91.8%

- Precision (Churn): 76%

- Recall (Churn): 63%

- ROC AUC: 0.81

The tuned decision tree provided the best balance between recall and interpretability.

Insights & Recommendations

- Customers with month-to-month contracts are more likely to churn.
- High monthly charges increase churn risk.
- Customers without internet service are less likely to churn.
- We recommend targeted retention offers for high-risk segments.

Next Steps

- Deploy model to flag high-risk customers weekly.
- Integrate predictions into CRM for personalized retention actions.
- Continue refining the model with new data.

Appreciation

We would like to thank Kaggle for allowing us access to their website to extract the Telcom's Churn data which made these analysis possible.

Questions?

We would love to hear your take on this! Please feel free to get in touch.

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