CUSTOMER CHURN ANALYSIS - TELECOM INDUSTRY

PRESENTED BY: THOTA VINOD KUMAR

OBJECTIVE

TO PREDICT TELECOM CUSTOMER CHURN AND PROVIDE ACTIONABLE INSIGHTS TO RETAIN USERS IN A COMPETITIVE TELECOM ENVIRONMENT.

TOOLS & TECHNOLOGIES

- Python (Scikit-learn, ELI5)
- SQLite (for data storage)
- Pandas, NumPy
- Seaborn, Matplotlib
- Jupyter Notebook / VS Code

PROJECT FEATURES

- Data Preprocessing
- Binary Classification (Churn Prediction)
- Model Explainability with ELI5
- Customer Segmentation:
  - At Risk
  - Loyal
  - Dormant

SQL-BASED ANALYSIS

- Aggregated call duration and complaint history
- Analyzed recharge frequency patterns
- Identified churn patterns using SQL queries
- Segmented high-risk users with behavior flags

MACHINE LEARNING MODEL

- Model Used: Random Forest Classifier
- Target Variable: churn (Yes/No)
- Training Features: Tenure, usage, complaints, recharge patterns, etc.
- Interpretability: Used ELI5 for model explanation
- Evaluation: Accuracy Score, Confusion Matrix

CUSTOMER SEGMENTATION

- At Risk: High complaints, low recharge frequency
- Loyal: Long tenure, consistent activity, low churn probability
- Dormant: Low engagement, low complaints, moderate churn risk

FINAL RECOMMENDATIONS

- Focus on retaining high-value At-Risk customers
- Offer loyalty rewards to long-term users
- Launch re-engagement campaigns for Dormant customers
- Monitor recharge and complaint frequency closely

THANK YOU

- Thank You!

  Presented by: Thota Vinod Kumar

  Customer Churn Prediction & Retention Strategy Project