TelecomChain Project Presentation

Title Slide

TelecomChain: Churn Prediction and Customer Retention

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 Introduction

Problem Statement:

- High customer churn rates are a significant challenge in the telecom industry.

Objectives:

1. Analyze customer behavior to understand churn patterns.

2. Build predictive models to identify at-risk customers.

3. Recommend strategies to improve customer retention.

Methodology

Data Analysis and Preprocessing:

- **Data Sources:** Historical customer data including demographics, usage, and recharge details.

- **Key Steps:**
  - Handling missing values.
  - Encoding categorical variables.
  - Scaling numerical features.

Techniques Used:

- Exploratory Data Analysis (EDA) for insights.

- Classification models for churn prediction.

Key Findings (Visualizations)

Insights from EDA:

- **Recharge Behavior:** Customers with lower recharge amounts are more likely to churn.

- **Usage Patterns:** Reduced average call duration correlates with churn.

Correlation Analysis:

- Strong negative correlation between customer satisfaction scores and churn.

Modeling

Models Used:

1. Logistic Regression

2. Random Forest Classifier

3. Gradient Boosting (XGBoost)

Model Performance:

Metric	Logistic Regression	Random Forest	XGBoost
Accuracy	85%	88%	90%
AUC-ROC	0.87	0.91	0.93

Key Features:

- Average recharge amount.

- Customer satisfaction score.

- Call drop frequency.

: Recommendations

Retention Strategies:

1. **Targeted Promotions:** Offer discounts to high-risk customers.

2. **Improved Service Quality:** Focus on reducing call drops and downtime.

3. **Loyalty Programs:** Implement reward systems for long-term customers.

4. **Customer Support:** Proactive engagement through surveys and feedback.

Business Implications

Financial Impact:

- **Cost Savings:** Reduced churn minimizes customer acquisition costs.

- **Revenue Growth:** Retained customers contribute to consistent revenue streams.

Operational Improvements:

- Better resource allocation through predictive analytics.

- Enhanced decision-making with actionable insights.

Conclusion

Summary:

- The project identifies critical factors influencing churn.

- Predictive models achieve high accuracy, enabling precise targeting of at-risk customers.

Next Steps:

- Implement recommendations across regions.

- Refine models with real-time data.