**Turning the Tide on Telecom Churn: A Data-Centric Approach**

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**Excerpt:** "Discover how advanced data science techniques and strategic accounting insights combine to tackle telecom churn, enhancing customer loyalty and business sustainability."

![Customer Churn](/assets/images/customer\_churn/download (1).jfif)

**From Numbers to Insights: My Journey**

**Overview:** In the dynamic landscape of the telecom sector, deciphering customer churn patterns became my mission. Utilizing Python as my primary tool, I blended data science expertise with strategically applied accounting experience to unravel the reasons behind customer turnover, aiming to forge strategies that enhance customer retention and drive business growth. This project represents not only a technical challenge but also a perfect fusion of my analytical skills with real-world business applications.

**The Data Story**

**Delving into Customer Behavior:** Armed with the Orange Telecom’s Churn Dataset, I embarked on a journey not just through data but through the stories behind the numbers. My objective was to integrate statistical analysis with practical insights, transforming raw data into narratives that shed light on customer experiences.

**Technologies and Tools Used**

The project leveraged Python as the primary programming language, utilizing libraries such as Pandas for data manipulation, NumPy for numerical operations, Scikit-Learn for machine learning algorithms, and Matplotlib along with Seaborn for data visualization.

**Data Exploration, Preprocessing, and Analysis**

**Initial Data Handling and EDA:** The project started with refining the data by addressing missing or inconsistent entries and converting categorical data into numerical formats to ensure a robust analysis base. Implementing robust scaling minimized the influence of outliers on the model predictions. I then delved into various aspects of the data to uncover patterns:

* **Total Day Minutes vs. Churn:** Higher total day minutes were linked to increased churn, suggesting customer dissatisfaction.
* **International Plan and Churn:** Customers with international plans showed a higher churn rate, indicating possible issues with these services.
* **Customer Service Calls and Churn:** Frequent customer service interactions typically indicated unresolved issues, leading to greater churn risk.

**Overcoming Data Challenges:**

* **Fair Data Sampling:** By using Stratified K-Fold Cross-Validation, I ensured every segment of the dataset was fairly represented, reflecting my background in maintaining rigorous standards in financial reporting.
* **Fine-Tuning Models:** In adjusting the Random Forest and Gradient Boosting models, I drew upon my skills in identifying and reacting to emerging trends, much like revising a financial forecast for accuracy.

**Results and Impact**

**Key Discoveries and Practical Strategies:**

* **Critical Churn Drivers Identified:** The analysis revealed high usage patterns, international plan subscriptions, and frequent customer service interactions as significant predictors of churn.
* **Actionable Insights for Business Strategy:** These findings were distilled into actionable strategies for improving customer service, optimizing pricing plans, and enhancing service offerings, significantly impacting customer retention rates and overall satisfaction.

**Reflections and Looking Ahead**

This exploration marked significant growth in my data science capabilities, reaffirming the value of adaptability and strategic thinking in a rapidly evolving industry. It underscored my unique ability to synthesize data insights with business acumen, preparing me to tackle modern challenges in a data-centric world.

**A Fusion of Disciplines for Future Innovations**

Venturing into telecom churn analysis showcased a powerful combination of data science and selective application of accounting knowledge, ready to address the challenges of the digital era.

**Discover the Full Story**

Dive into the comprehensive analysis [here](https://chat.openai.com/customer-churn/).

**Explore the Technical Journey**

For a detailed breakdown, including code and visuals, view the project notebook on [NBViewer](https://nbviewer.org/github/timothyrobbinscpa/new_customer_churn/blob/master/src/customer_churn.ipynb).

**Engage with My Journey**

I welcome feedback and discussions on this project and my journey into data science. Connect with me on [LinkedIn](https://chat.openai.com/g/g-HMNcP6w7d-data-analyst/c/87f0a4b4-7f57-43f1-87bf-4b8f754a0eef) to exchange ideas and explore potential collaborations.