



MY AKADEMI

PREDICTING CUSTOMER ATTRITION (CHURN) AT SYRIATEL

Machine Learning Project – Phase 3 (Classification)

Presented by

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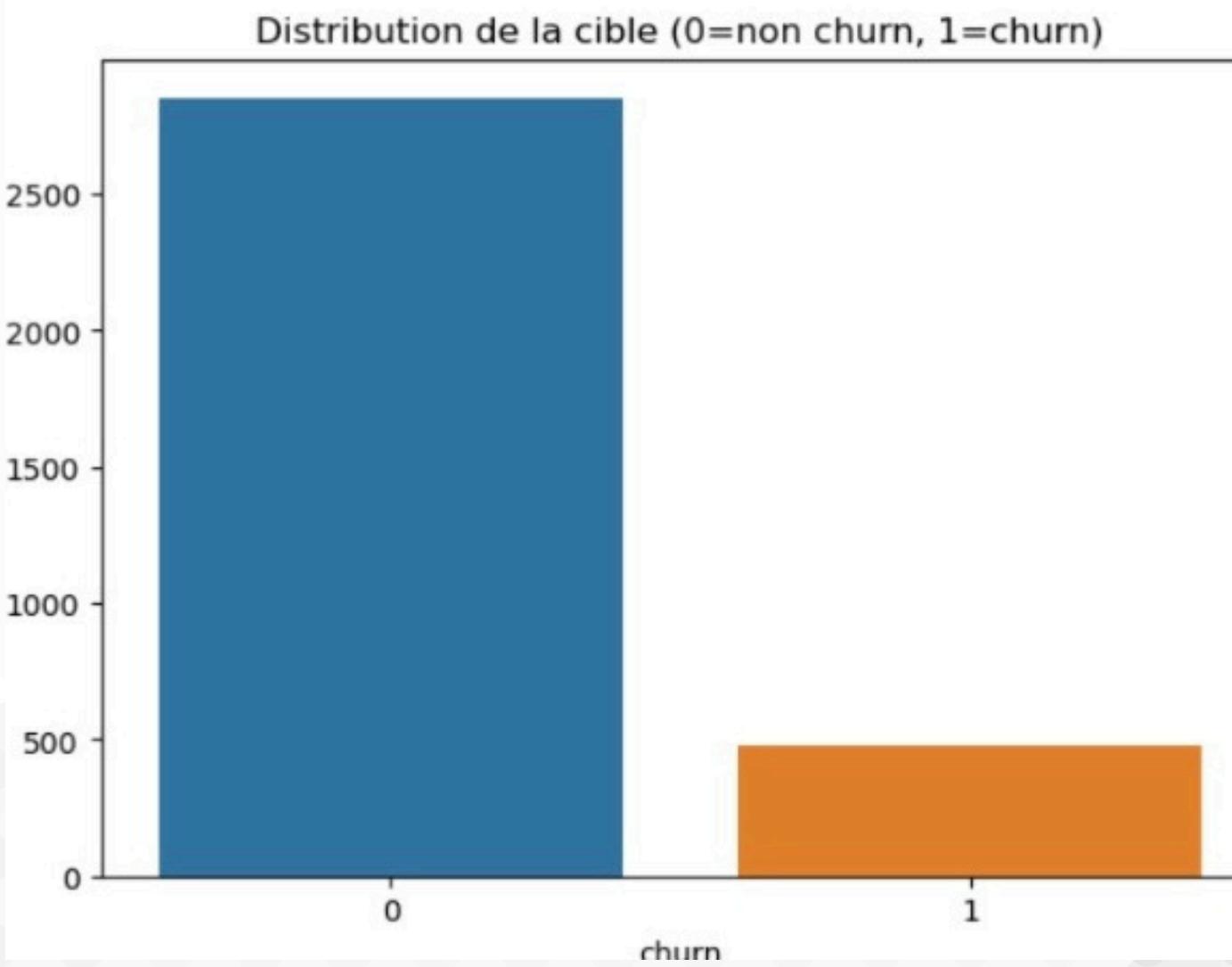


CONTEXT & PROJECT OBJECTIVE

- ✓ **Context:** The telecom operator SyriaTel is facing a significant churn rate. Losing a customer leads to a loss of revenue and high costs to acquire a new one.
- ✓ **Project Objective:** Build a predictive churn model in order to:
 - Identify customers at risk of cancellation,
 - Enable targeted, personalized retention actions.
- ✓ **Expected Benefit:** Reduce churn → improve loyalty and profitability.



Data Overview



- ✓ **Source:** SyriaTel internal data (customers, subscriptions, usage).
- ✓ **Size:** Several thousand records (each row = one customer).
Key variables analyzed:
 - ✓ Calls to customer service,
 - ✓ International plan (yes/no),
 - ✓ Minutes consumed (day, evening, night),
 - ✓ Voice mail plan.
- The dataset was split into Training and Test sets to evaluate reliability.

Methodology & Models Tested

Three approaches were compared :

Logistic Regression (baseline)

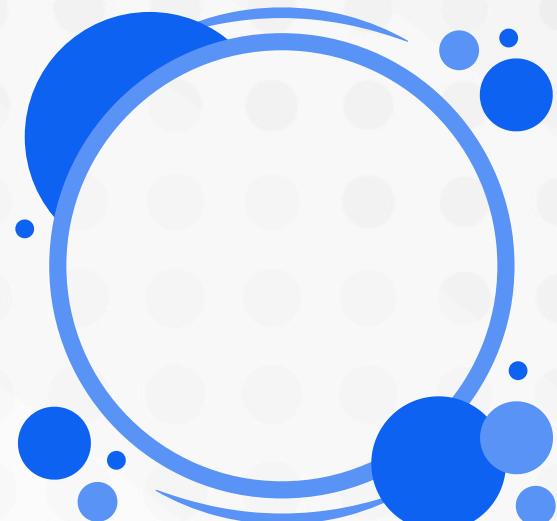
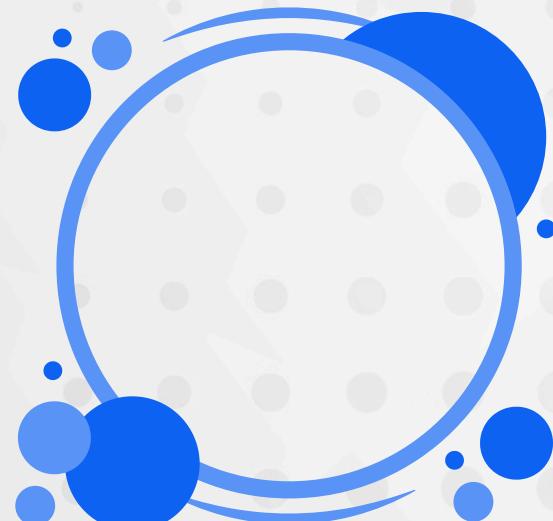
A simple, transparent model that is easy to explain.

Optimized Logistic Regression

Hyperparameters were tuned → limited improvement.

Random Forest

An advanced model, capable of capturing complex interactions between variables.



Results Evaluation

Overall Accuracy (~86%): Correct, but not sufficient on its own.

Recall (churn class = at-risk customers):

Baseline Logistic Regression: ~25% (low detection).

Optimized Logistic Regression: ~25% (little improvement).

Random Forest: Higher recall → better detection of churners.

Interim Conclusion: Random Forest is better suited for the business objective (identifying at-risk customers).

Conclusion & Recommendations

Conclusion

Classification models can be used to predict customer churn.
Random Forest is the best compromise for SyriaTel.

Recommendations

Integrate the Random Forest model into the CRM system.

Trigger targeted actions:

Personalized offers (international plans, adapted packages),
Proactive follow-up for customers who make frequent calls
to customer service.

Regularly retrain the model with new data.





Thank You



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