



Telco Customer Churn Recommendation

Request for Proposal

RFP#: DM – F2.H2

Title: Churn Model for Telco Customers

Closing Date and Time: October 17, 2022 @ 5:00 PM

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Background and Purpose:

By responding to this RFP, the proposer agrees that s/he has read and understood all documents within this RFP package.

Submission Details:

Responders to this RFP should supply:

- A business report up to 5 pages (not including cover page or table of contents), including any supporting plots and tables
- The commented code (in a separate file) used to produce the results

The report should address all points described in the “Objective” section below and should be submitted electronically through Moodle by 5:00 PM on October 17, 2022.

Objective

Telco is interested in contracting your services to build a decision tree model to predict churn at their company. They would like to compare the predictability of your decision tree model to their in-house models. In order to keep consistency with their practices, you will need to use an 80-20 split (training and test) when creating your tree model. Be sure to provide information on the decision tree you would recommend including the splitting information with a nice visual of the tree. They are also interested in knowing the misclassification rate for the test data.

Data provided

The tele_churn.csv dataset has 21 columns:

- **CustomerID**
- **Gender**
- **SeniorCitizen** – 1 senior citizen, 0 not
- **Partner** – whether the customer has a partner or not (yes, no)
- **Dependents** – whether the customer has dependents or not (yes, no)
- **Tenure** – number of months the customer has stayed with the company
- **PhoneService** – whether or not the customer has phone service (yes, no)
- **MultipleLines** – Whether the customer has multiple lines or not (yes, no, no phone service)
- **InternetService** – customer's internet service provider (DSL, Fiber optic, no)

- **OnlineSecurity** – whether the customer has online security or not (yes, no, no internet service)
- **OnlineBackup** – whether or not the customer has online backup or not (yes, no, no internet service)
- **DeviceProtection** – whether the customer has device protection or not (yes, no, no internet service)
- **TechSupport** – Whether the customer has tech support (yes, no, no internet)
- **StreamingTV** – whether the customer has streaming TV or not (yes, no, no internet service)
- **StreamingMovies** – Whether the customer has streaming movies or not (yes, no, no internet service)
- **Contract** – the contract term of the customer (month-to-month, one year, two years)
- **PaperlessBilling** – whether customer has paperless billing or not (yes, no)
- **PaymentMethod** – the customer's payment method (electronic check, mailed check, bank transfer(automatic), credit card (automatic))
- **MonthlyCharges** – the amount charged to customer monthly
- **TotalCharges** – the total amount charged to the customer
- **Churn** – whether the customer churned or not (yes, no)