

# CS504049 – Sample Topic of Final Project

## Topic:

Telco Customer Churn – Focused customer retention programs

## Description:

Each row in the dataset represents a customer, each column contains customer's attributes described on the column Metadata. The data set includes information about:

- Customers who left within the last month – the column is called Churn.
- Services that each customer has signed up for – phone, multiple lines, internet, online security, online backup, device protection, tech support, and streaming TV and movies.
- Customer account information – how long they've been a customer, contract, payment method, paperless billing, monthly charges, and total charges.
- Demographic info about customers – gender, age range, and if they have partners and dependents.

## Dataset:

The dataset used in this study is available at this link<sup>1</sup>.

<i>Attribute</i>	<i>Description</i>
customerID	Customer ID
gender	Whether the customer is a male or a female
SeniorCitizen	Whether the customer is a senior citizen or not (1, 0)
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 the customer has a phone service or not (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 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)

<sup>1</sup> <http://cs504049.duonghuophuc.com/static/files/sample-topic-final-project-dataset.zip>

<i>Attribute</i>	<i>Description</i>
TechSupport	Whether the customer has tech support or not (Yes, No, No internet service)
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 year)
PaperlessBilling	Whether the 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 the customer monthly
TotalCharges	The total amount charged to the customer
<b>Churn</b> [Label]	Whether the customer churned or not (Yes or No)

### **Models (Tentative):**

In this project, we propose to employ the following machine learning algorithms: decision tree learning, SVM, K-NN, Naïve Bayes, and some deep learning models.

### **Tools (Tentative):**

- Google Colab.
- WEKA.