

# Churn Analysis – ML \ DS Tech Interview

This interview is about thinking of a solution approach to whether a customer will change telecommunications provider, something known as "churning".

The training dataset contains 4250 samples. Each sample contains 19 features and 1 boolean variable "churn" which indicates the class of the sample. The 19 input features and 1 target variable are:

Your task in the interview will be to follow the data science method and talk about each and every step of your proposed solution including the what, how and whys of your approach.

Dataset details:

1. "state", *string*. 2-letter code of the US state of customer residence
2. "account\_length", *numerical*. Number of months the customer has been with the current telco provider
3. "area\_code", *string*="area\_code\_AAA" where AAA = 3 digit area code.
4. "international\_plan", yes/no. The customer has international plan.
5. "voice\_mail\_plan", yes/no. The customer has voice mail plan.
6. "number\_vmail\_messages", *numerical*. Number of voice-mail messages.
7. "total\_day\_minutes", *numerical*. Total minutes of day calls.
8. "total\_day\_calls", *numerical*. Total minutes of day calls.
9. "total\_day\_charge", *numerical*. Total charge of day calls.
10. "total\_eve\_minutes", *numerical*. Total minutes of evening calls.
11. "total\_eve\_calls", *numerical*. Total number of evening calls.
12. "total\_eve\_charge", *numerical*. Total charge of evening calls.
13. "total\_night\_minutes", *numerical*. Total minutes of night calls.
14. "total\_night\_calls", *numerical*. Total number of night calls.
15. "total\_night\_charge", *numerical*. Total charge of night calls.
16. "total\_intl\_minutes", *numerical*. Total minutes of international calls.
17. "total\_intl\_calls", *numerical*. Total number of international calls.

18. "total\_intl\_charge", *numerical*. Total charge of international calls
19. "number\_customer\_service\_calls", *numerical*. Number of calls to customer service
20. "churn", yes/no. Customer churn - target variable.