Data Science Foundations to Core Career Track
Capstone Two: Modeling

Overview

The goal of the modeling step is to develop a final model that effectively predicts the stated goal in the problem identification section. Review the types of models that would be appropriate given your modeling response and the features in your dataset and build two to three models. In addition to considering different algorithm types in your model selection, also consider applying model hyperparameter tuning operations. Be sure to define the metrics you use to choose your final model.

If you need a refresher about how to go about building a model, review the work you did during the guided capstone and the unit about modeling.

Project Steps
Time Estimation: 10-15 Hours

Modeling
Goal: Build two to three different models and identify the best one.

- Fit your models with a training dataset

Hint: Try a number of different models: you will want to compare their outputs in the model evaluation stage. For example, if you're writing a classification model, you should implement both an entropy model and a Gini impurity model. For hyperparameter tuning, think of methods like cross-validation*.*

- Review model outcomes — Iterate over additional models as needed

Hint: you may want to use standard model evaluation metrics such as [accuracy, recall, precision, and F1.](#)

- Identify the final model that you think is the best model for this project

Hint: the most powerful model isn't always the best one to use. Other considerations include computational complexity, scalability, and maintenance costs.

Review the following questions and apply them to your analysis:

- Does my data involve a time series or forecasting? If so, am I splitting the train and test data appropriately?
- Is my response variable continuous or categorical?

Previous Student example:

[Example 1](#): Predicting cab booking cancellation

Please note: Because your dataset and project are different from every other student's work, you may spend more or less time on this step than what is allotted in the time estimate. That's totally fine! Just be sure to stay in touch with your mentor to make sure you're on track and have defined a reasonable scope of work.