

# Module 4 Overview

## Introduction

This module explores the application of data mining techniques in driving uplift in consumer goods sales and improving the cost-effectiveness of direct marketing campaigns. You will build data mining models using Random Forest, *k*-NN, Logistic Regression, classification trees, Bagging (known as Bootstrap aggregating), AdaBoost, Linear Discriminant Analysis, and Neural Networks. Using Python, you will leverage models from the scikit-learn library, including LogisticRegression, DecisionTreeClassifier, BaggingClassifier, RandomForestClassifier, LinearDiscriminantAnalysis, MinMaxScaler, and MLPClassifier. This includes making sure you have a viable and meaningful insight to build a story with and that you do not inadvertently interfere with the effective communication of your insight.

## Learning Outcomes

- Create data mining models, using Random Forest and *k*-NN, that enable sales up-lift for marketing campaigns.
- Construct multiple data mining models - including Logistic Regression, classification trees, Bagging, AdaBoost, Random Forest, Linear Discriminant Analysis, and Neural Networks, to improve the cost-effectiveness of direct marketing campaigns.
- Analyze the foundation of data stories and the importance of this foundation in enabling your insights to drive action.

## Overview Table

Activity	Due Date	Format	Point Value
Discussion 4.1: Driving Change with Data and Stories	Day 4 (Initial Post)	Discussion	10
	Day 7 (Peer Responses)		
Assignment 4.1: Use Case - Direct-Mail Fundraising	Day 7	Assignment	80
Module 4 Final Team Project Check-In	Day 7	Survey	5
Module 4 Quiz	Day 7	Quiz	20