Marketing Data Science

Modeling Techniques in Predictive Analytics with R and Python

THOMAS W. MILLER

For information about buying this title in bulk quantities, or for special sales opportunities (which may include electronic versions; custom cover designs; and content particular to your business, training goals, marketing focus, or branding interests), please contact our corporate sales department at corpsales@pearsoned.com or (800) 382-3419.

For government sales inquiries, please contact governmentsales@pearsoned.com.

For questions about sales outside the U.S., please contact international@pearsoned.com.

C.3 Bank Marketing Study

A Portuguese bank conducted seventeen telephone marketing campaigns between May 2008 and November 2010. The bank recorded client contact information for each telephone call. Table C.2 shows variable names and descriptions for the study.

Client characteristics include demographic factors: age, job type, marital status, and education. The client's previous use of banking services is also noted.

Current contact information shows the date of the telephone call and the duration of the call. There is also information about the call immediately preceding the current call, as well as summary information about all calls with the client.

The bank wants its clients to invest in term deposits. A term deposit is an investment such as a certificate of deposit. The interest rate and duration of the deposit are set in advance. A term deposit is distinct from a demand deposit.

The bank is interested in identifying factors that affect client responses to new term deposit offerings, which are the focus of the marketing campaigns. What kinds of clients are most likely to subscribe to new term deposits? What marketing approaches are most effective in encouraging clients to subscribe?

Table C.2.   *Bank Marketing Study Variables*

Variable Name	Description (Possible Values)
	Client Demographics
age	Age in years
job	Type of job (admin., unknown, unemployed, management, housemaid, entrepreneur, student, blue-collar, self-employed, retired, technician, services)
marital	Marital status (married, divorced, single) [Note: "divorced" means divorced or widowed]
education	Level of education (unknown, secondary, primary, tertiary)
	Client Banking History
default	Has credit in default? (yes, no)
balance	Average yearly balance (in Euros)
housing	Has housing loan? (yes, no)
loan	Has personal loan? (yes, no)
	Data from Most Recent Marketing Contact/Call
contact	Contact communication type (unknown, telephone, cellular)
day	Last contact day of the month
month	Last contact month of year (jan, feb, mar, . . ., nov, dec)
duration	Last contact duration (in seconds)
	Data from All Marketing Contacts/Calls
campaign	Number of contacts performed during this campaign for this client (includes last contact)
pdays	Number of days that passed since the client was last contacted from a previous campaign (-1 means client was not previously contacted)
previous	Number of contacts performed before this campaign for this client
poutcome	Outcome of the previous marketing campaign (unknown, other, failure, success)
	Response to Most Recent Marketing Contact/Call
response	Has the client subscribed to a term deposit? (yes, no)