Package ‘ChannelAttribution’
December 8, 2016

Type Package
Title Markov Model for the Online Multi-Channel Attribution Problem
Version 1.10
Date 2016-12-07
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Description Advertisers use a variety of online marketing channels to reach consumers and they want to know the degree each channel contributes to their marketing success. It's called the online multi-channel attribution problem. This package contains a probabilistic algorithm for the attribution problem. The model uses a k-order Markov representation to identifying structural correlations in the customer journey data. The package also contains three heuristic algorithms (first-touch, last-touch and linear-touch approach) for the same problem. The algorithms are implemented in C++.
License GPL (>= 2)
URL http://www.slideshare.net/ada1982/markov-model-for-the-multichannel-attribution-problem
 http://www.lunametrics.com/blog/2016/06/30/marketing-channel-attribution-markov-models-r/
 http://analyzecore.com/2016/08/03/attribution-model-r-part-1/
Imports Rcpp (>= 0.11.4)
LinkingTo Rcpp, RcppArmadillo
NeedsCompilation yes
Repository CRAN
Date/Publication 2016-12-08 01:06:25

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Description

Advertisers use a variety of online marketing channels to reach consumers and they want to know the degree each channel contributes to their marketing success. It’s called the online multi-channel attribution problem. In many cases, advertisers approach this problem through some simple heuristics methods that do not take into account any customer interactions and often tend to underestimate the importance of small channels in marketing contribution. This package provides a function that approaches the attribution problem in a probabilistic way. It uses a k-order Markov representation to identifying structural correlations in the customer journey data. This would allow advertisers to give a more reliable assessment of the marketing contribution of each channel. The approach basically follows the one presented in Eva Anderl, Ingo Becker, Florian v. Wangenheim, Jan H. Schumann (2014). Differently for them, we solved the estimation process using stochastic simulations. In this way it is also possible to take into account conversion values and their variability in the computation of the channel importance. The package also contains a function that estimates three heuristic models (first-touch, last-touch and linear-touch approach) for the same problem.

Details

Package: ChannelAttribution
Type: Package
Version: 1.10
Date: 2016-12-07
License: GPL (>= 2)

Package contains two functions: markov_model which estimates a k-order Markov model and heuristic_model which estimates three heuristic models (first-touch, last-touch and linear-touch) from customer journey data.

Author(s)

Davide Altomare, David Loris
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References


Data

Customer journeys data

Description

Customer path data with conversions and conversion value.

Usage

data(PathData)

Format

Data is a data.frame with 10,000 rows and 4 columns: "path" containing customer paths, "total_conversions" containing total number of conversions, "total_conversion_value" containing total conversion value and "total_null" containing total number of paths that do not lead to conversion.

heuristic_models

Heuristic models for the online attribution problem

Description

Estimate three heuristic models (first-touch, last-touch, linear) from customer journey data.

Usage

heuristic_models(Data, var_path, var_conv, var_value=NULL)

Arguments

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<tr>
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<td>var_path</td>
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Value

An object of class data.frame with the estimated number of conversions and the estimated conversion value attributed to each channel for each model.

Author(s)

Davide Altomare (<davide.altomare@gmail.com>).
Examples

data(PathData)

#uncomment the following lines to run the examples

#heuristic_models(Data,"path","total_conversions")
#heuristic_models(Data,"path","total_conversions",var_value="total_conversion_value")

markov_model

Markov model for the online attribution problem

Description

Estimate a k-order Markov model from customer journey data.

Usage

markov_model(Data, var_path, var_conv, var_value=NULL, var_null=NULL, order=1, nsim=NULL, max_step=NULL, out_more=FALSE)

Arguments

Data          data.frame containing paths and conversions.
var_path      name of the the column containing paths.
var_conv      name of the column containing total conversions.
var_value     name of the column containing total conversion value.
var_null      name of the column containing total paths that do not lead to conversions.
order         order of Markov Model.
nsim          total simulations from transition matrix.
max_step      maximum number of steps for a single simulated path.
out_more      if TRUE returns the transition probabilities between channels and removal effects.

Value

An object of class data.frame with the estimated number of conversions and the estimated conversion value attributed to each channel.

Author(s)

Davide Altomare (<davide.altomare@gmail.com>).
Examples

data(PathData)

#uncomment the following lines to run the examples

#markov_model(Data, "path", "total_conversions")
#markov_model(Data, "path", "total_conversions",
#    var_value="total_conversion_value")
#markov_model(Data,"path","total_conversions",
#    var_value="total_conversion_value", var_null="total_null")
#markov_model(Data, "path", "total_conversions",
#    var_value="total_conversion_value", var_null="total_null", out_more=TRUE)
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