

Business Analytics Workshop

Case Study on Business Metrics – Ads Analysis

Goal

Maybe the first industry to heavily rely on data science was the online ads industry. Data Science is used to choose which ads to show, how much to pay, optimize the ad text and the position as well as in countless other related applications.

Optimizing ads is one of the most intellectually challenging jobs a data scientist can do. It is a really complex problem given the huge (really really huge) size of the datasets as well as the number of features that can be used. Moreover, companies often spend huge amounts of money on ads and a small ad optimization improvement can be worth millions of dollars for the company.

The goal of this project is to look at a few ad campaigns and analyze their current performance.

Challenge Description

Company XYZ is a food delivery company. Like pretty much any other site, in order to get customers, they have been relying significantly on online ads, such as those you see on Google or Facebook.

At the moment, they are running 40 different ad campaigns and want you to help them understand their performance.

Data

We have 1 table: **ad_table - aggregate information about ads**

- date: all data are aggregated by date
- shown: the number of ads shown on a given day all over the web. Impressions are free. That is, companies pay only if a user clicks on the ad, not to show it
- clicked : the number of clicks on the ads. This is what companies pay for. By clicking on the ad, the user is brought to the site
- converted : the number of conversions on the site coming from ads. To be counted, a conversion has to happen on the same day as the ad click.
- avg_cost_per_click: on an average, how much it cost each of those clicks
- total_revenue: how much revenue came from the conversions
- ad: we have several different ad versions with different text. This shows which ad group we are considering