



# Data Science at Dalia

Irati R. Saez de Urabain, PhD  
June 18, 2018

# What do we do

---



# What do we do at Dalia?



**Dalia enables people all over the world to share their voice through mobile surveys.**



**We deliver knowledge to decision makers in business, politics & academia.**

# How Dalia works

## Dalia's Open Recruitment System



Dalia **sources unlimited users** from a network of over **40 thousand apps and websites**.

Up to **10 million people** from **100+ countries** answer surveys on Dalia's platform each month.

**93% are fresh survey takers** answering "on-the-go", more representative of the digital consumer

# Data Science at Dalia

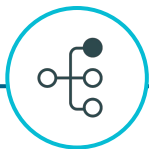
---



# Dalia's Audience Profiling Process



Millions of casual survey respondents are sourced through a network of over **40k apps and websites**



Every user is **dynamically profiled** across key demographic and behavioral attributes



A **self-learning quality assurance system**, based on active & passive info, generates a unique trust score for each user



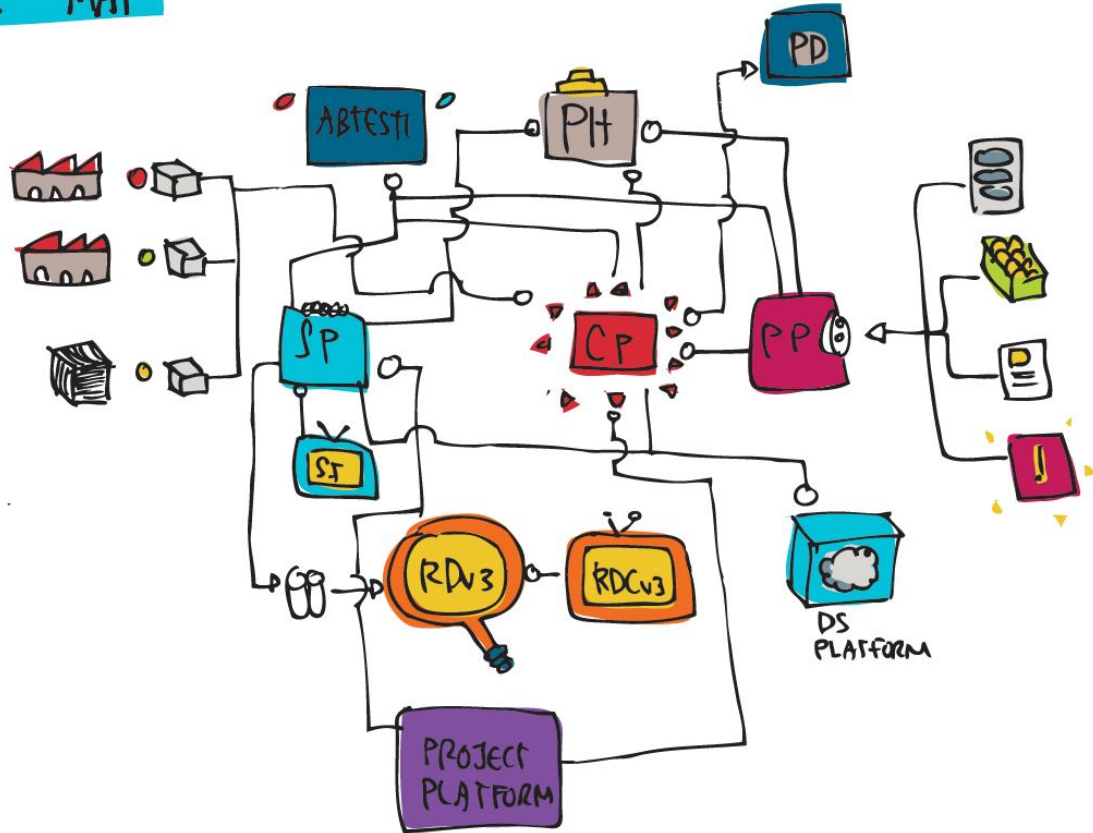
A targeted attribution matches **high quality, verified users** to the appropriate surveys



An instant **reward** (e.g. virtual currencies, prepaid credits, access to premium content) is awarded to users who complete their survey

# Inside the machine

## THE MAP



# Data Science at Dalia

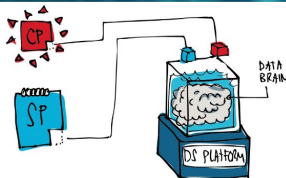


We extract knowledge from Data in various forms

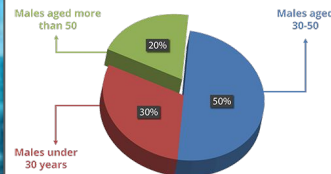
Ad Hoc analyses



Data Science projects



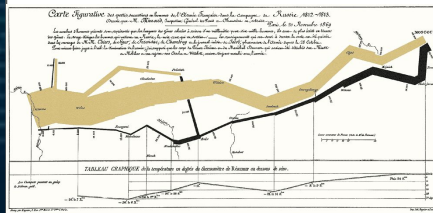
MRP, quota free sampling



User Trust Scores



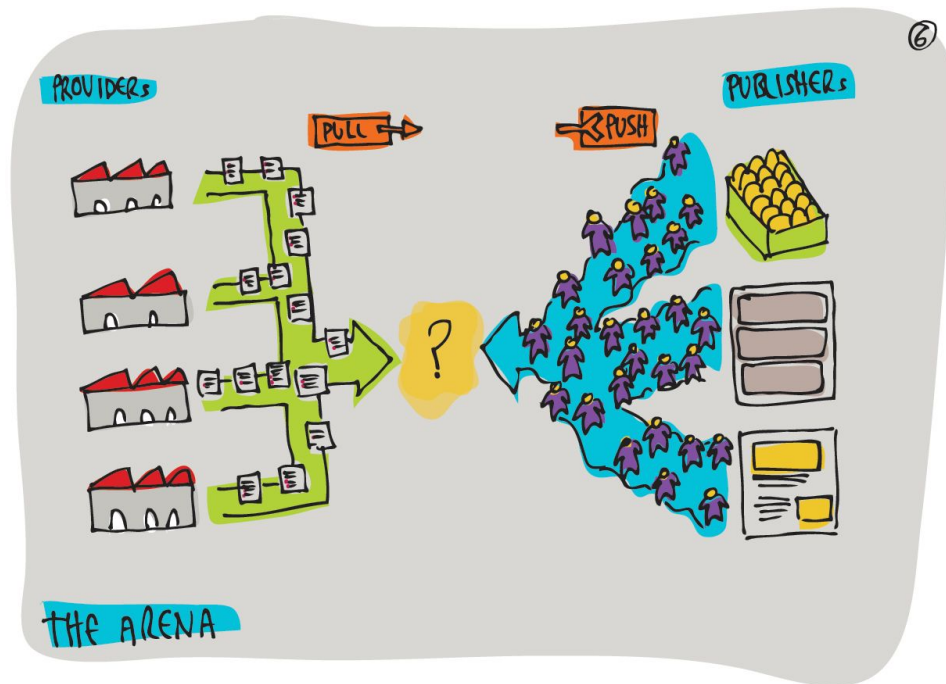
Data accessibility and visualization



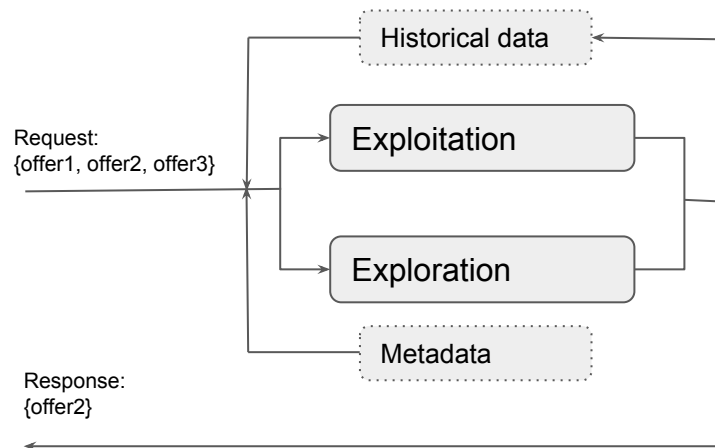
Survey Ranking algorithm







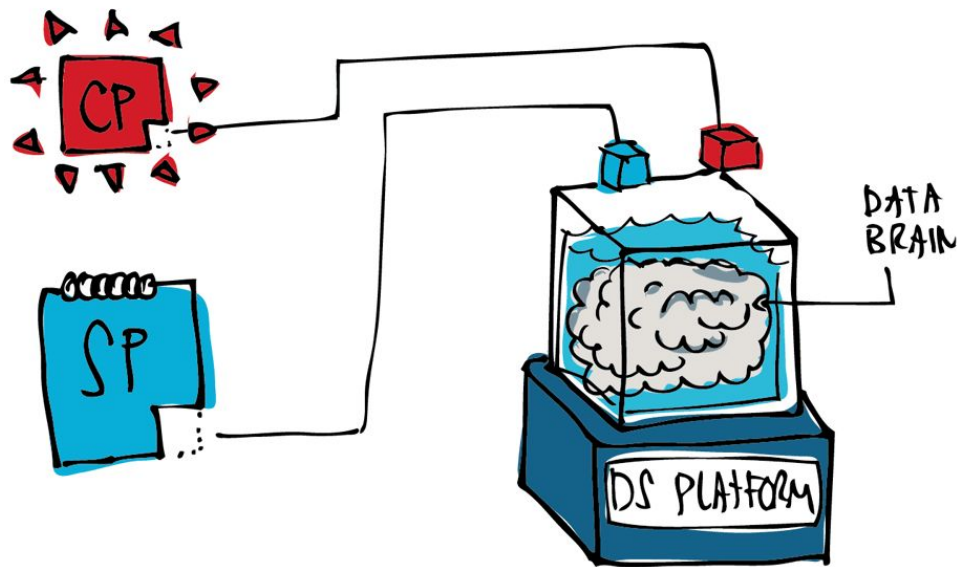
## The Explore - Exploit dilemma



# Step 1: The birth of the Data Science Platform



## DATA SCIENCE PLATFORM



### Motivation:

- Data Science production code
- Testing prototypes in an agile way

### What is the Data Science Platform?

- Python REST API
- Different end points for each project
- Receives a request and returns a response using DS algorithms and Machine Learning

# Step 2: Simple heuristics rankers

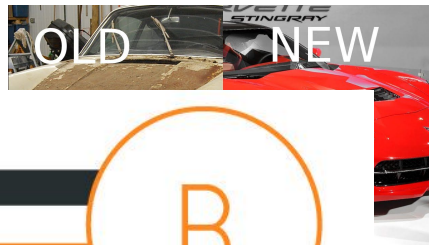


We had too many business ideas

- Are new surveys better than old surveys ?



We selected the most promising ones, and tested the simple algorithms

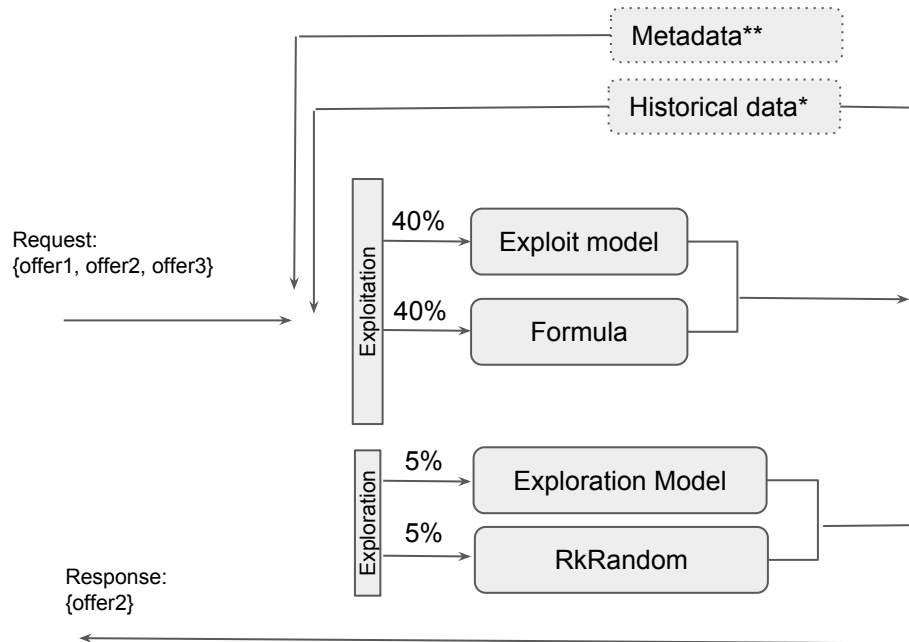


lots of traffic to high

users are sending us?

should we exploit and explore?

# Step 3: Machine Learning to explore and exploit surveys



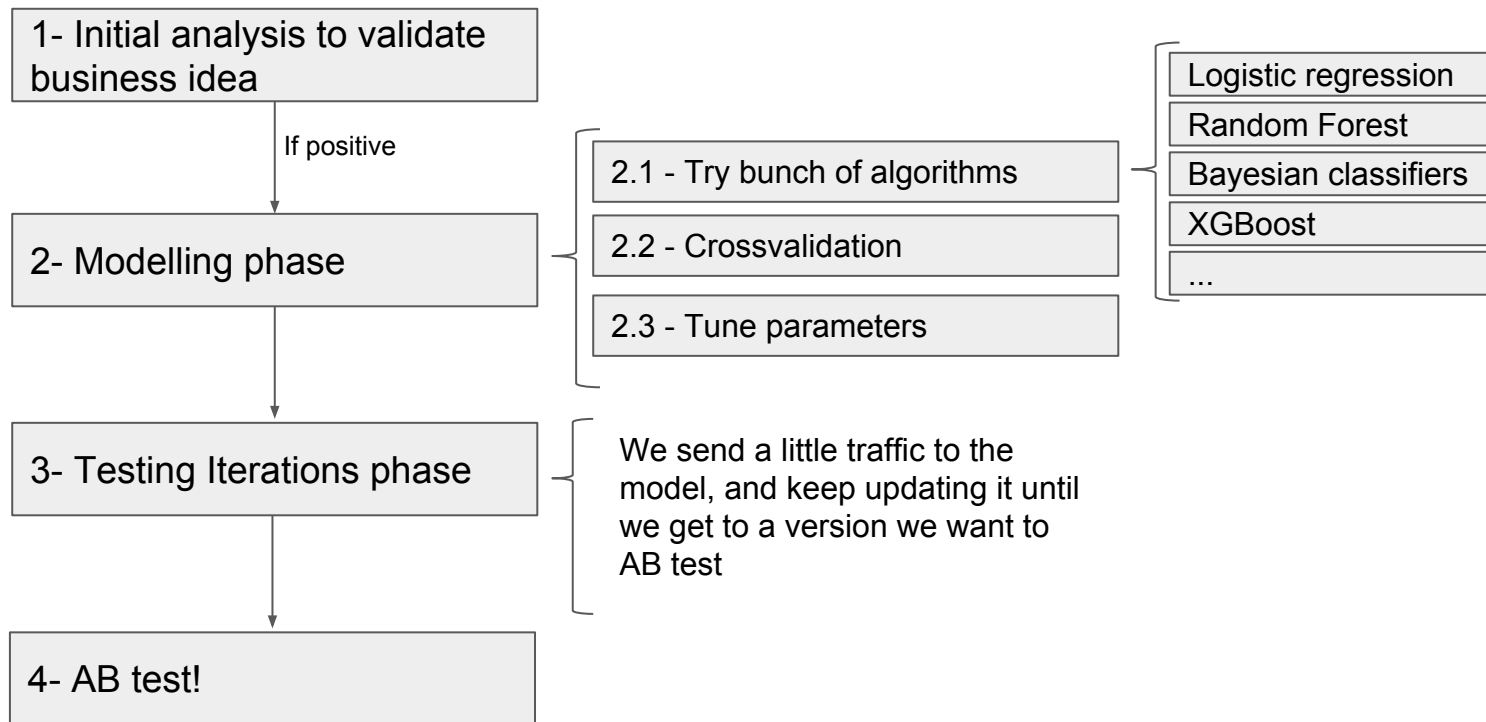
## Motivation

- The formula reached its limit
  - Very hard to track changes
  - Too many variables
  - Not optimal
  - Not adaptive to business changes

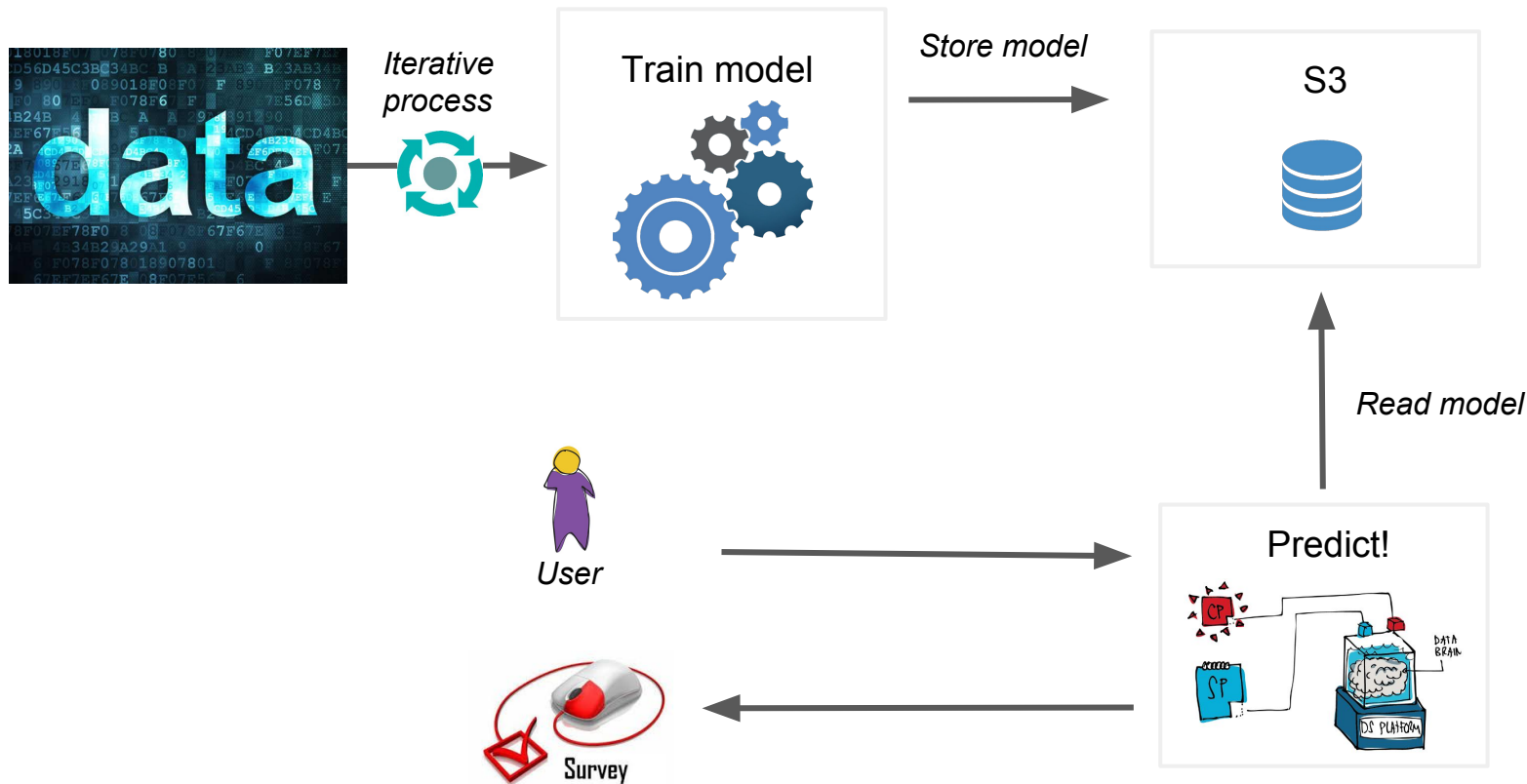
# Step 3: Machine Learning to explore and exploit surveys



## Process for Machine Learning algorithms



# Machine Learning in production



# Any questions?

---



Thanks!



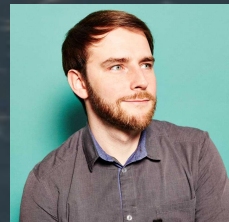
Kostas Christidis, PhD



Irati R. Saez de Urabain, PhD



Jakob Ludewig



Korbinian Oswald

