



MACHINE LEARNING PREDICTIONS WITH "THE WHY"

## DIGITAL AD MEASUREMENT'S CHALLENGE

Ad spend efficiency has never been more important. Frustration has continued to increase with a digital ecosystem challenged by ad blocking, saturation, fraud, and breaks in how audience, campaign, response and sales data can be connected accurately. The result is poor measurement and ad waste. Understanding the effect of an ad treatment through A/B testing has become extremely challenging, cumbersome and difficult to track at an individual level to really answer the question, **"where are my ad dollars best spent to impact purchase behavior?"**

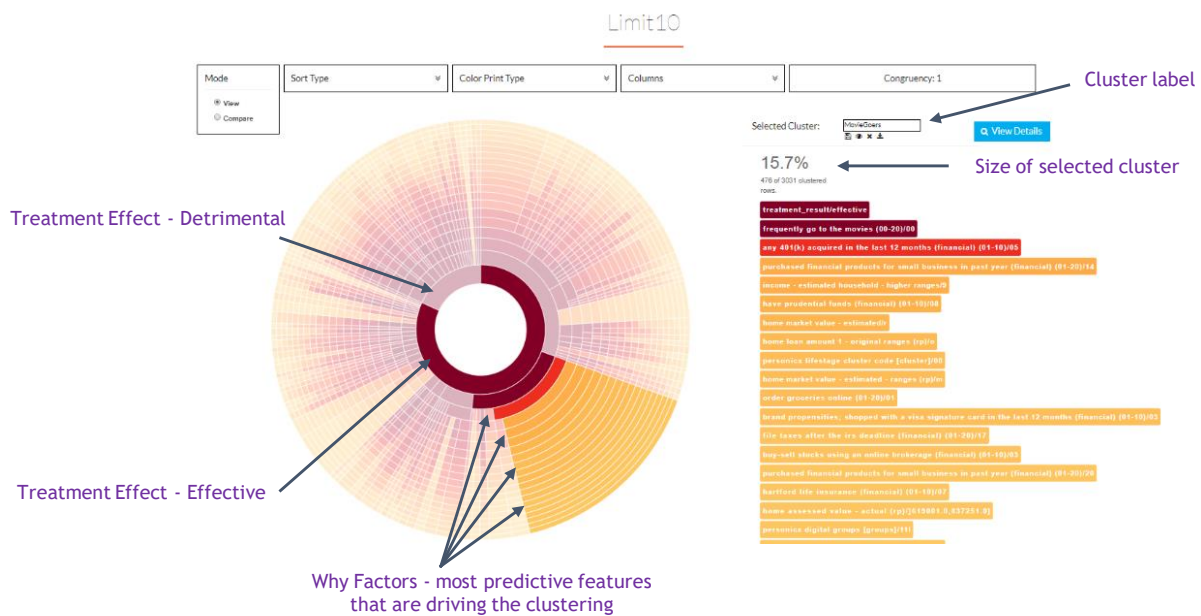
## HOW WE SOLVE IT

simMachines use of similarity-based machine learning, combined with advanced metric learning distance functions, uniquely solves these challenges. We are able to pair "twins" between test and control groups with a high degree of precision and then match up the campaign and delivered audiences exactly, to **reveal ad effect at a one to one level**. Because **our AI technology is explainable, we can expose the factors associated with audiences** responding positively or negatively to an ad effect treatment, **in order of importance**. We call this dynamic feature weighting and it is unique to our technology.

## CRITICAL INSIGHTS REVEALED AT A ONE TO ONE LEVEL

Exposing the most important factors associated with why a particular audience positively responded to an ad treatment, provides key measurement insights that enable a brand to understand where to best spend their ad dollars. The below diagram shows how our software reveals the most predictive features of a clustered group of responders / buyers. **Armed with this information, spend can be focused, offers refined and look-a-like prospect audiences automatically generated.**

### simMachines Dynamic Predictive Ad Effect Segments





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## OUR DIGITAL AD MEASUREMENT APPLICATION: BEYOND A/B

An easy to use application enables end users to click through a series of screens to create twin pairs, test, tune and evaluate the accuracy with which they have been created, generate output files, and then ingest ad impression and response / conversion data to generate ad effect insights for analysis and planning purposes. And all of this can be done in hours in addition to the ability to run counts and select look-a-like audiences by positive ad treatment effect segment. Fields can be weighted by the user if required, bias tests run and synthetic control groups automatically generated as needed, or a user can upload a test and control group already prepared for pairing.

Match: D7Camp50W1

Match Status | Column Weighting | Match Results

Match Details

Name: D7Camp50W1  
Creation Date: 01-30-2019  
Sample size: 0.50  
Seed: 654249  
Distance Function Tuning Setting: 7  
Status: COMPLETED

Matching Actions

- Bias Tests
- A/B Test Results
- Clustering
- Targeting

Bias Tests of Match: D7Camp50W1

id	Column Name	Test	Creation Date	Status	Alpha	Test Statistic	P-Value
idControl	3017: gender code	CHI_SQUARE_TEST	01-30-2019	COMPLETED	0.05	10.2909	0.0674
idControl	3017: gender code	CHI_SQUARE_TEST	01-30-2019	COMPLETED	0.05	0.00854	1
idControl	8616: age in two-year increments - 1st Individual	CHI_SQUARE_TEST	01-30-2019	COMPLETED	0.05	49.343729	0.5309
idControl	8616: age in two-year increments - 1st Individual	CHI_SQUARE_TEST	01-30-2019	COMPLETED	0.05	49.105288	0.9989
idControl	Sales	T_TEST	01-30-2019	COMPLETED	0.05	0.821976	0.4111
idControl	Sales	T_TEST	01-30-2019	COMPLETED	0.05	1.816686	0.06928

5 | 10 | 25

Create Bias Test

A/B Test Results

Treatment Response Rate	57.29%
Control Response Rate	32.60%
Treatment Response LIFT	75.76%
T Test Statistic	64.33791
T Test Alpha	0.05%
T Test P-Value	0.0000
Reject Null Hypothesis	Yes
Effective Treatments	36.28%
No Effect Treatments	52.12%
Detrimental Treatments	11.59%

Visualization Menu

Selected Cluster: 5

7.92%

100 (100% selected)

View Details

- treatment\_#month#referral
- treatment\_#B71# income - estimated household - annual single
- treatment\_#B8# income - estimated household - higher single
- treatment\_#B81# income - estimated household
- treatment\_#B811# gender - female
- treatment\_#B812# purchased financial products for small business in past year
- treatment\_#B813# product purchased gift card or prepaid card and phone bill
- treatment\_#B8131# bank - preferred bank - chime
- treatment\_#B8132# bank - preferred bank - chime
- treatment\_#B8133# bank - preferred bank - chime
- treatment\_#B8134# bank - preferred bank - chime
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- treatment\_#B8136# bank - preferred bank - chime
- treatment\_#B8137# bank - preferred bank - chime
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- treatment\_#B815# bank - preferred bank - chime
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## IMPROVE DIGITAL AD SPEND EFFICIENCY & CAMPAIGN ROI

Who responded positively and why? Where is my money best spent? Who should I not target? Who would have purchased anyway? Where is my ad treatment not having any effect? These are all questions simMachines answers, providing the following benefits:

- Individual level ad effect insights with high granularity and resolution in hours vs. weeks
- Eliminate waste with the ability to adjust audience selection and media buys with precision
- Instant audience search and ranking for more prospects that will respond positively to your ad

## DATA REQUIREMENTS

Test and control groups with demographic data (can be appended by simMachines), ad impression and response / conversion data. Synthetic control groups can be generated on U.S. population if desired.