Erasmus Centre for Data Analytics

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Expert Practice *on* ***Trial Design and Experimentation***

Using AI to help society experiment and learn

Trial Design and Experimentation: Introduction

Prof. Gui Liberali

"New developments in machine learning have the potential to dramatically improve experimentation and clinical trials. For example, online advertising experiments using our methods showed observed double click-through rates, and applications of our methods are helping change the way trials are designed and conducted, which increases beneficence (i.e., maximes learning and minimizes patient harm).

We help organization and companies with their experiments both in companies as well as in clinical trials by helping them with the methods and tools they need to excel and benefit society"

Trial Design and Experimentation: Overview

We are an international group of marketing scientists with backgrounds in computer science, econometrics, and statistics, working on managerially important topics related to machine learning, trials and causal inference.

Trial Design and Experimentation : Overview

The Trial Design and Experimentation practice aims to:

1. Facilitate interactions between academia and industry
2. Disseminate and increase the impact of academic research

Collaboration opportunities can take different shapes:

- Data sharing and research collaboration
- Contract research/consulting
- Research funding (e.g., PhD projects)

Team // research interests

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Trial Design and Experimentation

Gui Liberali, Professor and Director // clinical trials , multi-armed bandits, reinforcement learning

Alina Ferecatu, Assistant Professor // experimental economics, decision heuristics, Bayesian models

Aurelie Lemmens , Associate Professor // targeting optimization, customer acquisition, development and retention

Dan Shley, Associate Professor **//** understanding how the mind processes numeric information, judgments and choice

Jason Roos, Associate Professor **//** causal models, digital advertising, information goods

Pieter Schoonees, Assistant Professor // computational statistics, machine learning, psychometrics

Xi Chen, Associate Professor // digital tools and platforms, quantitative marketing

Ibrahim , PhD student // Online reviews, personalization algorithms

Examples of ongoing projects

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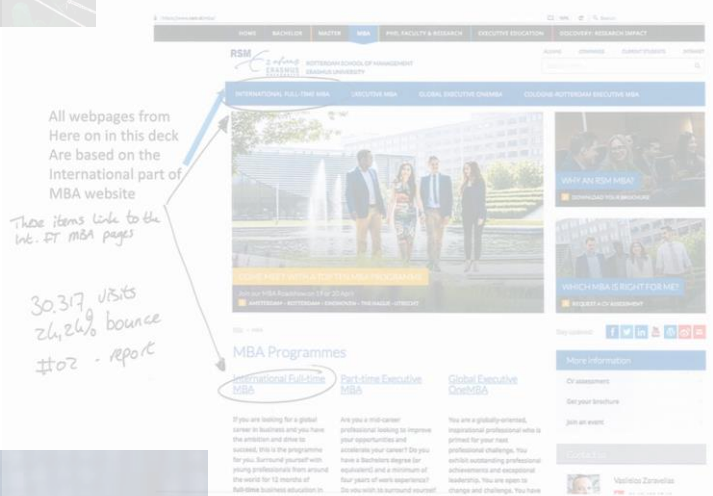
Trial Design and Experimentation

- How can we use machine learning to improve clinical trials? (with Erasmus Medical Center and MIT)
- How to predict pre-conception? (with Erasmus Medical Center)

- Managing churn to maximize profits (with Harvard Business School)
- How to best use machine learning to improve conversion ?

- Evaluating the impact of point-based systems on the consumption of digital products
- How to use machine learning to built personalized online reviews



Examples of recent publications (and links)

B.M. Turner, D.R. Schley, C. Muller & K. Tsetsos (2018). Competing theories of multi-alternative, multiattribute preferential choice. *Psychological Review, 125* (3), 329-362. doi: 10.1037/rev0000089

A. Lemmens & S. Gupta (2020). Managing churn to maximize profits. *Marketing Science*. doi: 10.2139/ssrn.2964906 [go to publisher's site]

K. Giesecke, G. Liberali, H. Nazerzadeh, G. Shanthikumar & C.P. Teo (2018). Special Issue on Data-Driven Prescriptive Analytics. *Management Science, 64* (6), 2972-2972. doi: 10.1287/mnsc.2018.3120

J.M.T. Roos, C.F. Mela & R. Shachar (2020). The Effect of Links and Excerpts on Internet News Consumption. *Journal of Marketing Research, 57* (3), 395-421. doi: 10.1177/0022243720913029

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