How To Test & Roll

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Workshop Description

Marketers often use A/B testing as a tool to compare marketing treatments in a test stage and then deploy the better-performing treatment to the remainder of the consumer population. These tests have traditionally been analyzed using hypothesis testing. In this workshop, Elea and Ron will explain a new approach to A/B testing that they developed called "Test & Roll" that focuses on the profit earned during and after the test. It is based on a Bayesian decision theory and the (very technical) Test & Roll paper explains why marketers should use this approach. This workshop will focus on how to Test & Roll using hands-on examples in R. Elea and Ron will cover:

- When you should use "Test & Roll" versus traditional hypothesis test
- How to compute the Test & Roll sample size that maximizes profits
- How to estimate priors from your own data to help plan your Test & Roll
- How to analyze a Test & Roll experiment (It's easy!)

Materials

If you want follow along, you can view the Slides.

If you have want to run the code as we go through the workshop, you can download the [R Markdown Code for the Slides]. You will need to have R, R Studio and the `rstan` package installed. You will need the file `nn_functions.R`. Download XX and XX to a local director and you'll be ready to go.

If you use git, you can also clone the entire workshop repository at (github.com/eleafeit/testandroll). The `howto` folder contains the R Markdown files for hte workshop. (There is other good stuff in the repo, including a copy of the paper and R scripts for replicating the analysis in the paper.)

Expectations

- I will assume you have a general idea ofwhat a probability distribution (like the normal distribution) is.
- I expect you are comfortable reading R. I will use mathematical calculations, for loops, and plotting.
- You do not need to know how plan and analyze an A/B test using hypothesis testing, but see previous R Ladies Philly workshop on A/B testing.