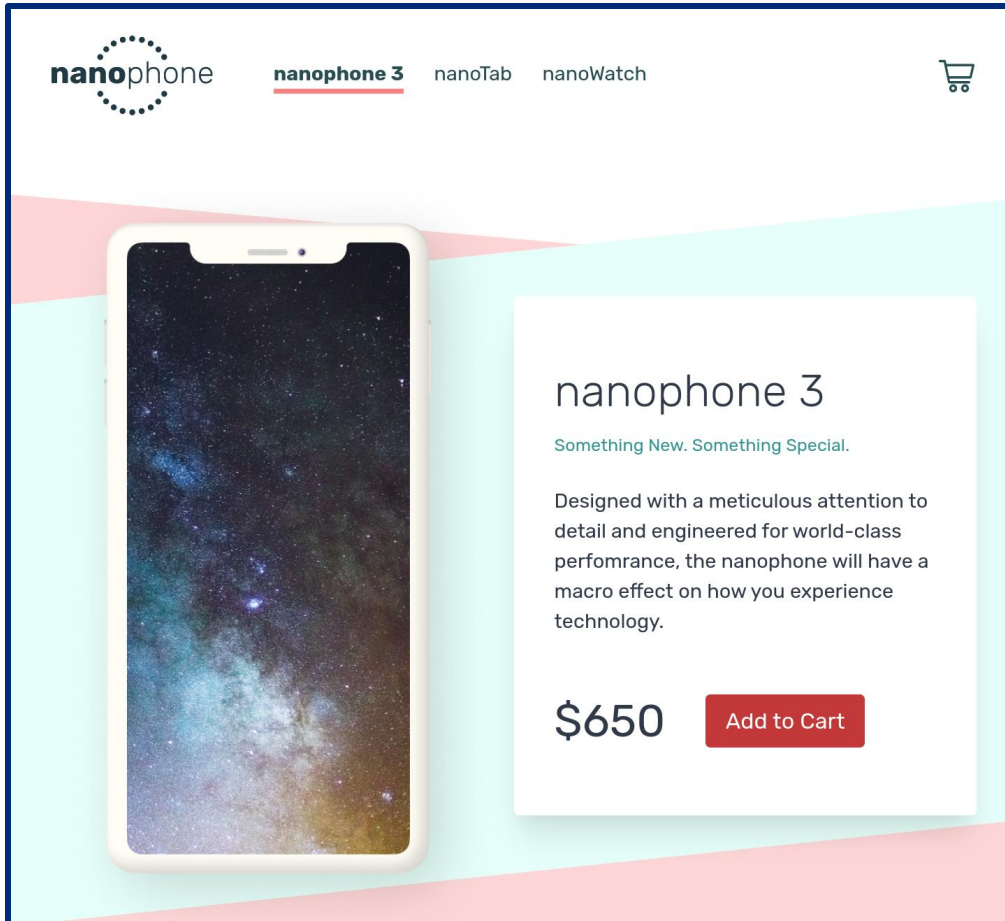

A/B Testing & Reinforcement Learning Simulation Game

What is A/B testing?


- "A/B test" is business speak for a scientific "randomized controlled trial" or "randomized experiment"
- Useful in many environments; anywhere that you have two (or more strategies) and
 - don't know which one is best
 - can implement each strategy using *randomization*
 - can measure the results of each strategy
- Examples:
 - Biomedicine & pharmaceuticals
 - Physical advertisements and direct mail
 - Online platforms and business

A/B testing in e-commerce



- Low cost of design/development
- Abundant and easy data collection
- Clear business objectives
- Import to learn how/why some designs perform better than others


A/B testing simulation game

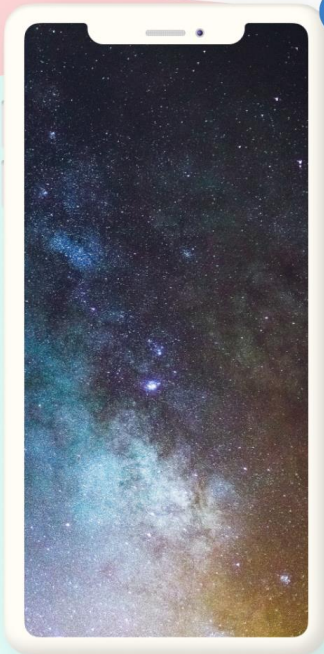


nanophone 3

nanotab

nanowatch





nanophone 3

Something New. Something Special.

Designed with a meticulous attention to detail and engineered for world-class performance, the nanophone will have a macro effect on how you experience technology.

\$650

Add to Cart

Features

New SessionStart Over

HelpLog out

Week 3/12Total Profits \$230K

Run Week 3

Active Experiments

Image

Traffic Settings

Results

Variant	Sessions	Conversion	Conversion Rate	Lift over baseline	p-value	Statistical baseline
A	3280	131	3.99%	--	--	
B	3246	106	3.27%	-0.73	0.03*	
C	3449	117	3.39%	-0.60	0.06	

Delete

Pause

Call to Action

Traffic Settings

Results

A/B Testing

Goals of simulation game

- Introduce you to modern A/B testing and online personalization in a hands-on way
- Learn about concepts and principles of using A/B tests for decision making

Logistics

- Today:
 - Live walkthrough and demo by me
- Between today and Session 10:
 - You will form a group (same as final project group; look for announcements on selecting your group in Canvas)
 - You will all have personal access to the simulation
 - Play around with the app and focus on trying to learn testing **strategies** that maximize your final score (this will take several run throughs!)
 - I will hold several office hour sessions to answer any questions
- Live in class for Session 10:
 - Before class, your group will upload a 1-page document detailing learnings & strategies
 - Each **group** will play the game live in a competition
 - We will debrief and review successful strategies and key concepts

Keep in mind:

- This is a new app
- Server performance is adaptive; if slow when you first start, it should get a little faster with use
 - Server load between simulation weeks will consistently be ~3 seconds
- I will be available by email and hold office hours several times in the next few weeks