The background is a dark navy blue. It features several large, overlapping, semi-transparent geometric shapes in various colors: bright green, cyan, magenta, orange, and red. These shapes are arranged in a way that creates a sense of depth and movement, with some appearing to recede into the background and others coming forward.

# **ITINERARY OPTIMIZATION WITH MACHINE LEARNING**

## DID YOU KNOW?

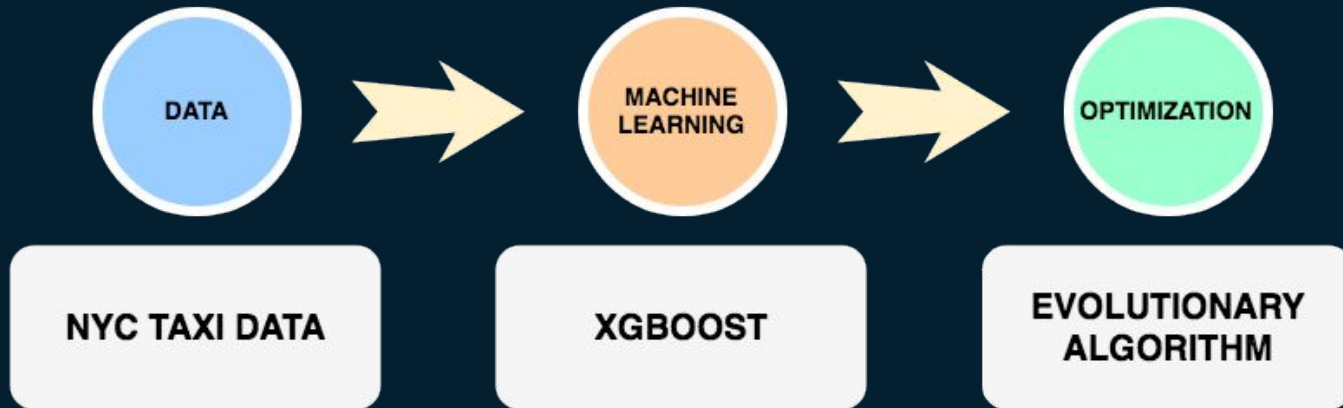
- › UPS drivers have to read 74 pages about delivery efficiency
- › It would cost UPS \$30 million per year if each driver drives just one unnecessary mile each day

## MY APPROACH

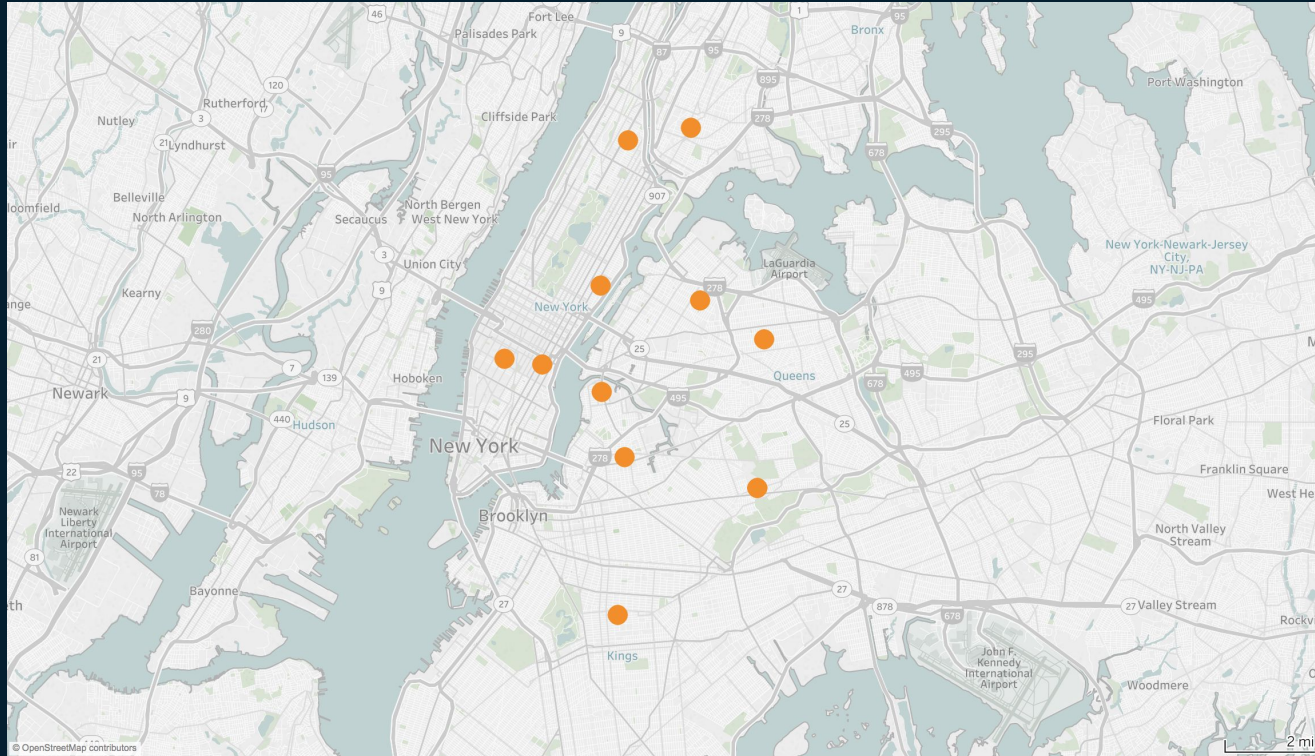
- › Combine machine learning and traditional mathematical models
- › And calculate shortest travel times for multiple locations

## DESIGN PROCESS

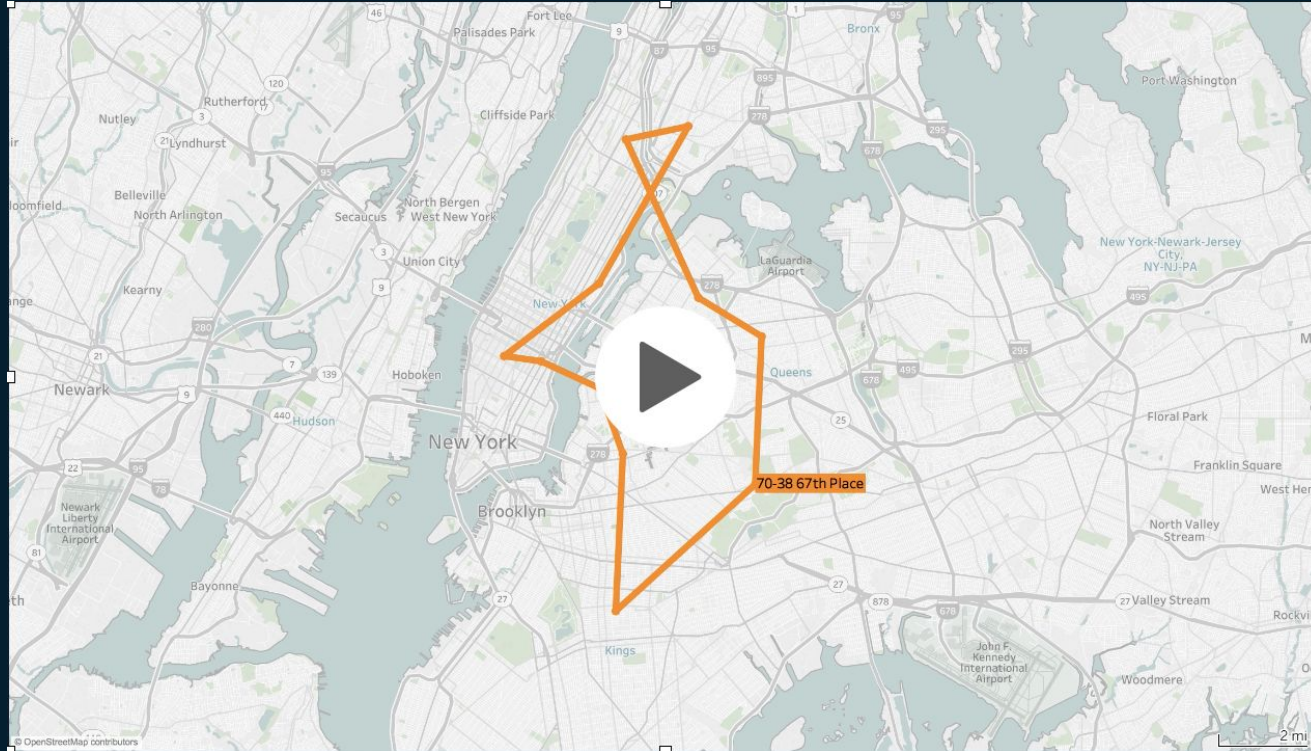
1. 2016 New York City taxi data: over 120M data points
2. Machine learning to predict travel times
3. Genetic algorithm to take predictions and construct time-efficient trip itinerary



## DEMO: PLAN A ROUTE GIVEN 11 POINTS ON THE MAP



## DEMO: RECOMMENDED VISIT ORDER (travel time: 3hr 2m)



## FURTHER WORK

- › Routes based on time of the day
- › Exact street pathing (Google Maps API)
- › Incorporate weather data and forecasts
- › Who else can benefit from it: FedEx, USPS, DHL, or any other delivery service with determined daily delivery locations