Predicting NYC Taxi 🚕 fare amount
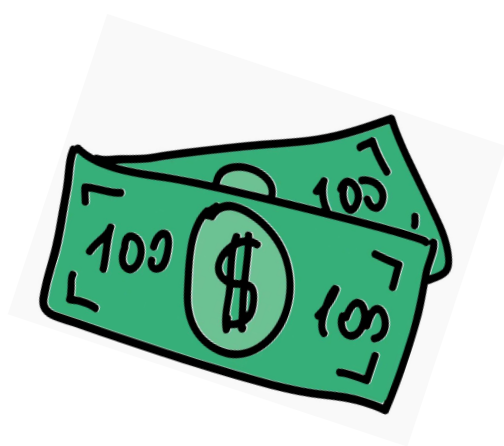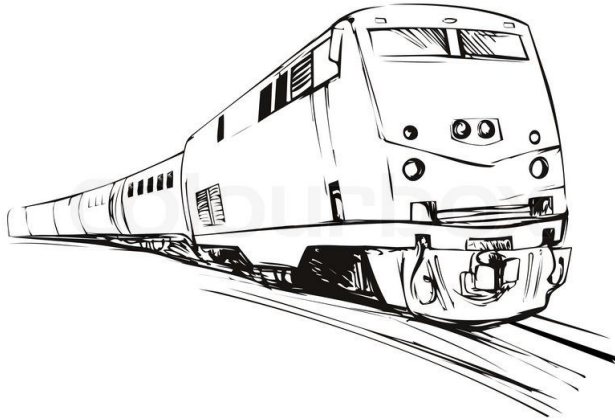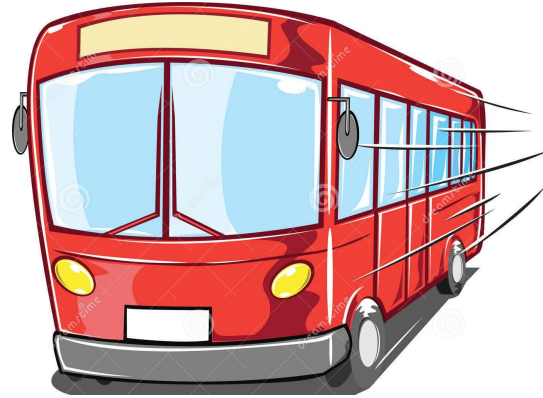
By Omar Hijazi

Project Overview

GOAL: Predict NYC taxi fare amount given details such as pickup/dropoff location, time, etc.

REQUIREMENTS:

- Competitive and profitable
- Automated
- Instantaneous

Who cares?

Data

Source: NYC Taxi & Limousine Taxi Commission.

Year: 2017

Constraints / Assumptions:

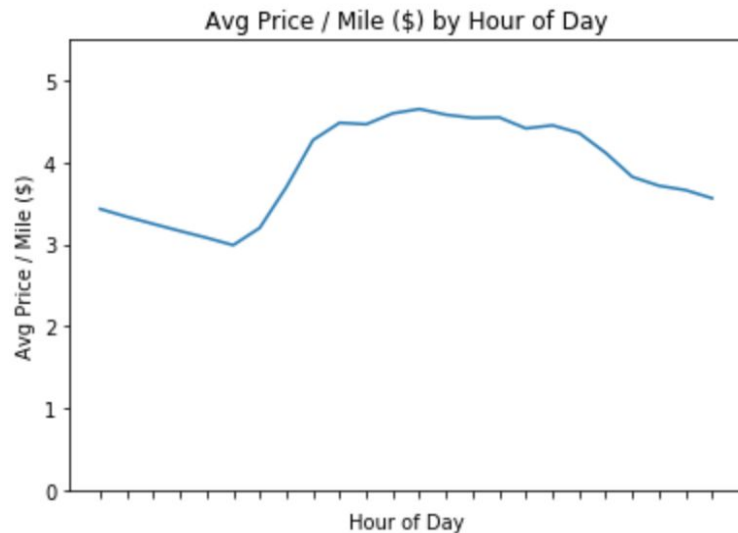- Trips lasting 2 minutes to 2 hours.
- Trips from 0.2 miles up to 60 miles.

Riders: Wake early... pay less!

Best time to leave: 5-6 am
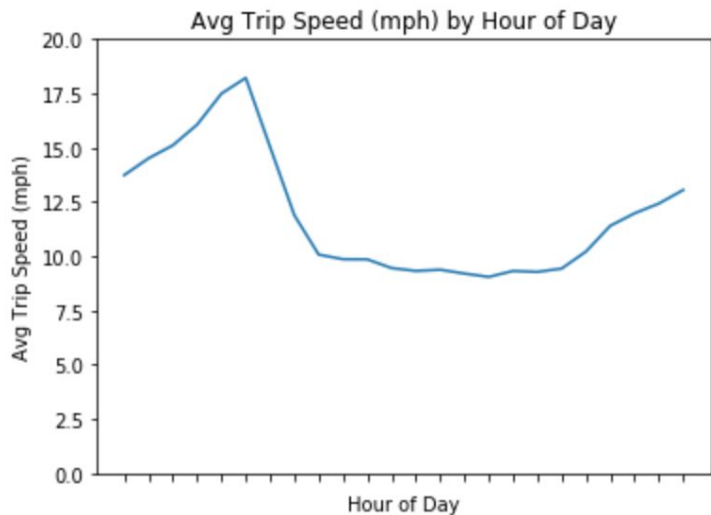
Wait 3 hours: $1.50 to $2.00

extra per mile!

Avg Price / Mile ($) by Hour of Day

Riders: Wake Early... travel faster!

Best time to leave: 5-6 am.

Wait 3 hours: 2x journey time.

Avg Trip Speed (mph) by Hour of Day

Drivers: Wake early... make more money

Best time to leave: 5-6 am!

Wait 3 hours: Make 20-30% more.

Avg Fare/Hour Driven by Hour of Day
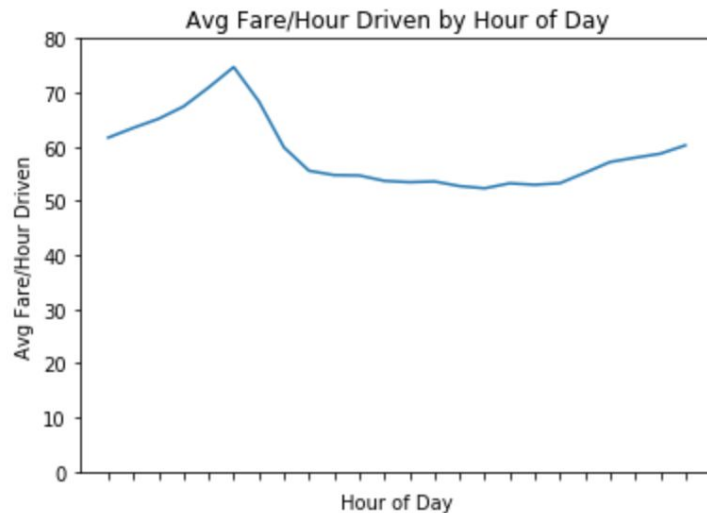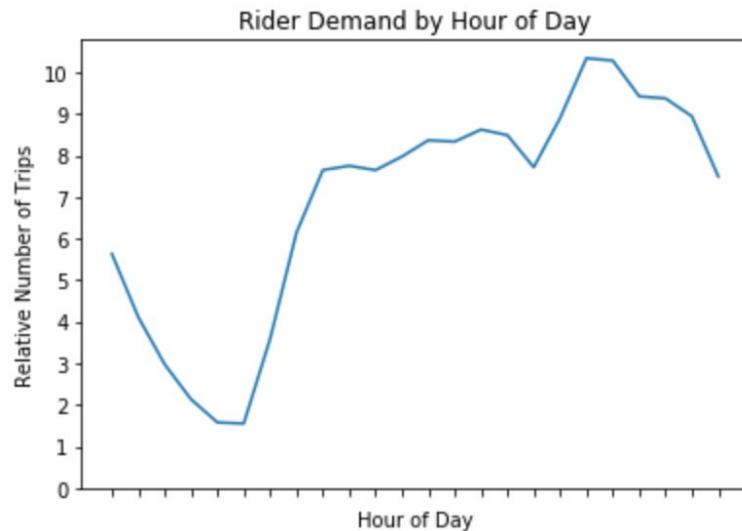
Drivers: Wake early… catch the riders!

Hmmm… to catch those

money-making riders, you better

wake up early.

Demand at 8-9 am is ~4 times

demand at 5-6 am.

Rider Demand by Hour of Day

Strongest Predictors of fare

Time. Distance. Duration ---> Fare Amount

Prediction results

Median trip fare: ~$9.00

Avg trip fare: ~$10.50

Best Model Predictions: $0.46 from actual fare

- +/- 5% from median fare
- +/- ~4.4% from avg fare