
EDA OF MTA TURNSTILE DATA
NEW YORK CITY
PDC
ONE STOP SOLUTION
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Oct 7, 2021
The crowds are still there
Really?

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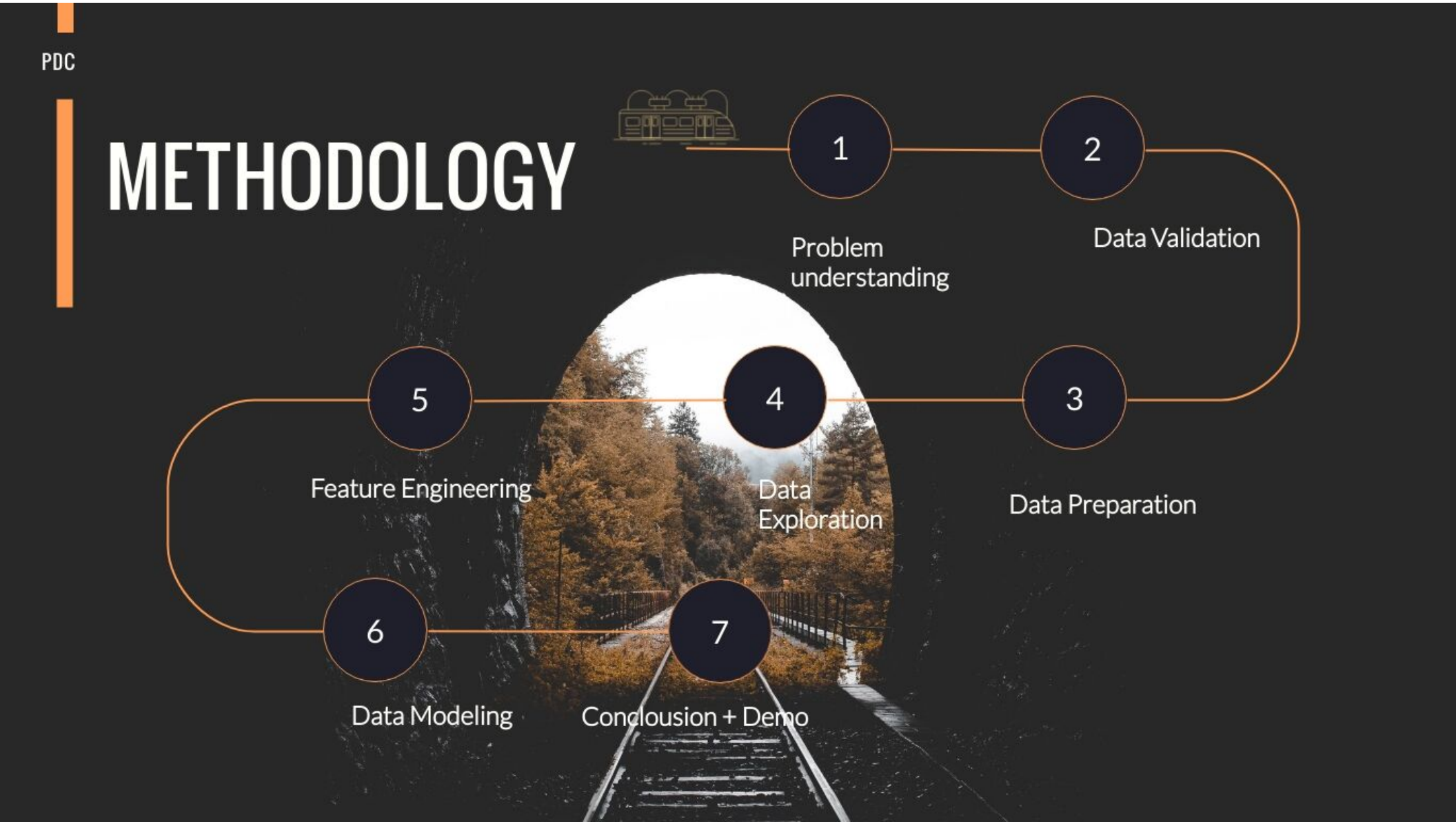
METHODOLOGY



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PROBLEM UNDERSTANDING

Overview:

- MTA commute plagued by delays as riders gripe over crowds and delays on lines led to dangerously crowded trains.

Problem Statment:

- Find the congestion and detected it on a live map.
- Discover demand of trains across all stations and further optimize the availability of trains to busy stations.
- Identify how to reduce congestion and delays on crowded station that waste commuters' time.

Scope:

- Due to the computational and time constraint as well as the unavailability of complete datasets. The MTA Turnstile and MTA maps will be used.

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DATA EXPLORATION

Data preparation & Data Imputation

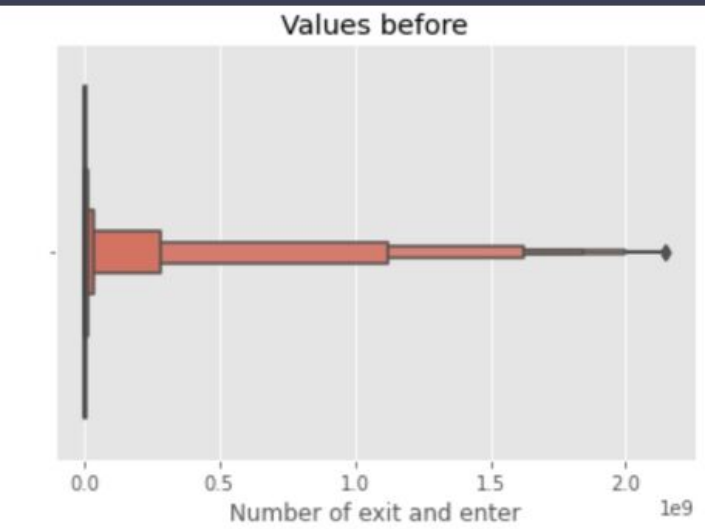
DATA VALIDATION

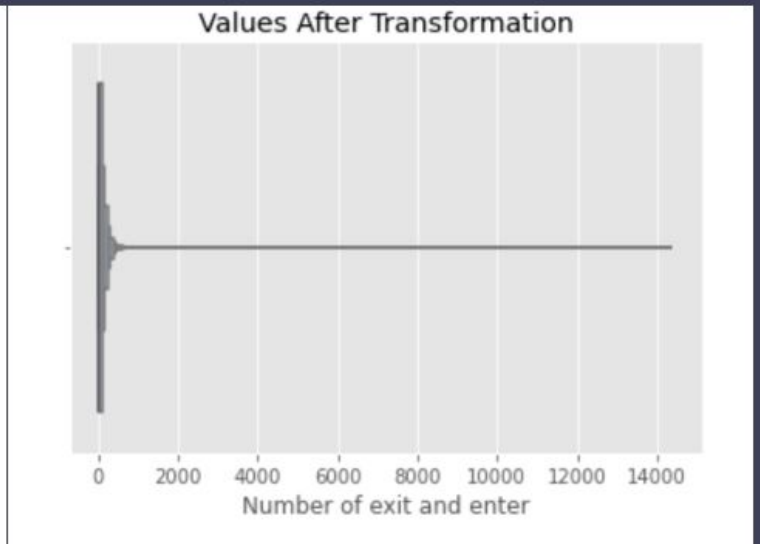
Validate for

Duplicate Data

Missing Values

outlier and Illogical Entries





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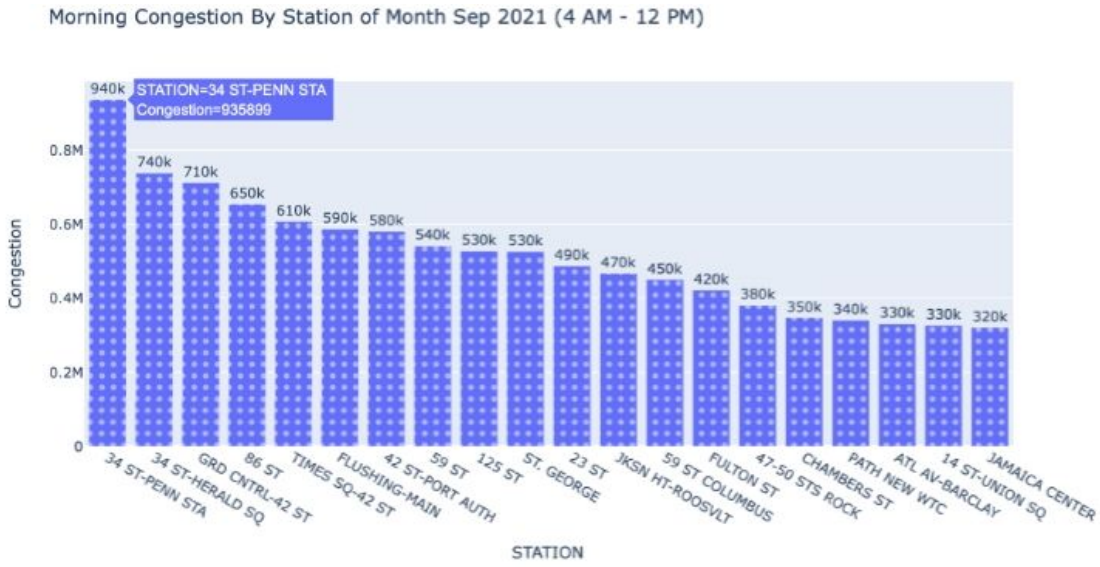
FEATURE ENGINEERING

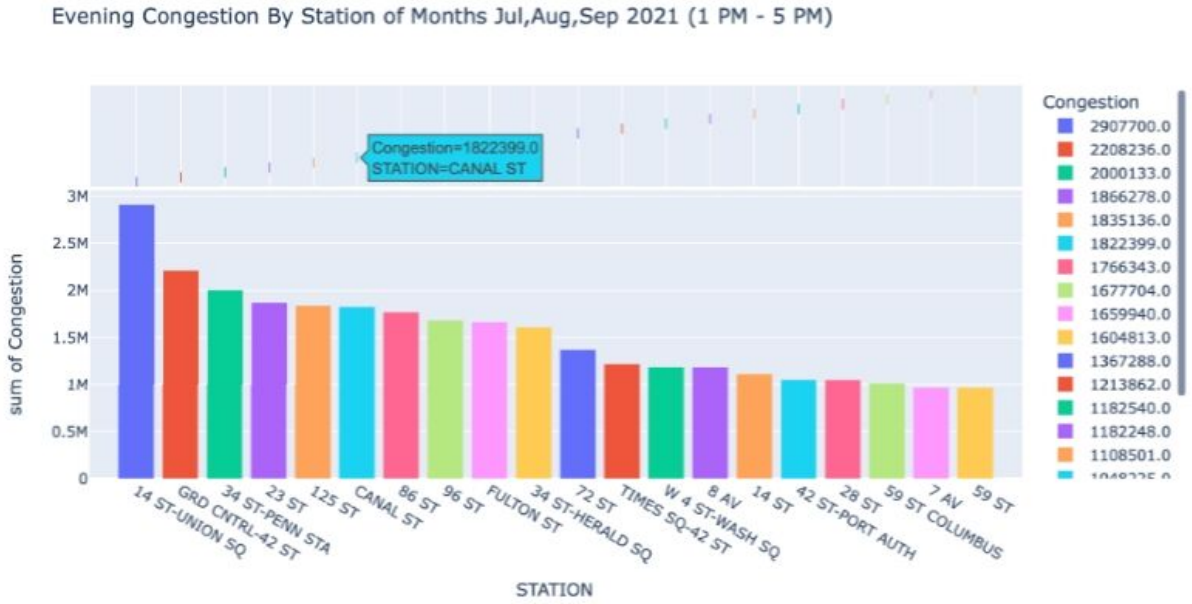
Observations:

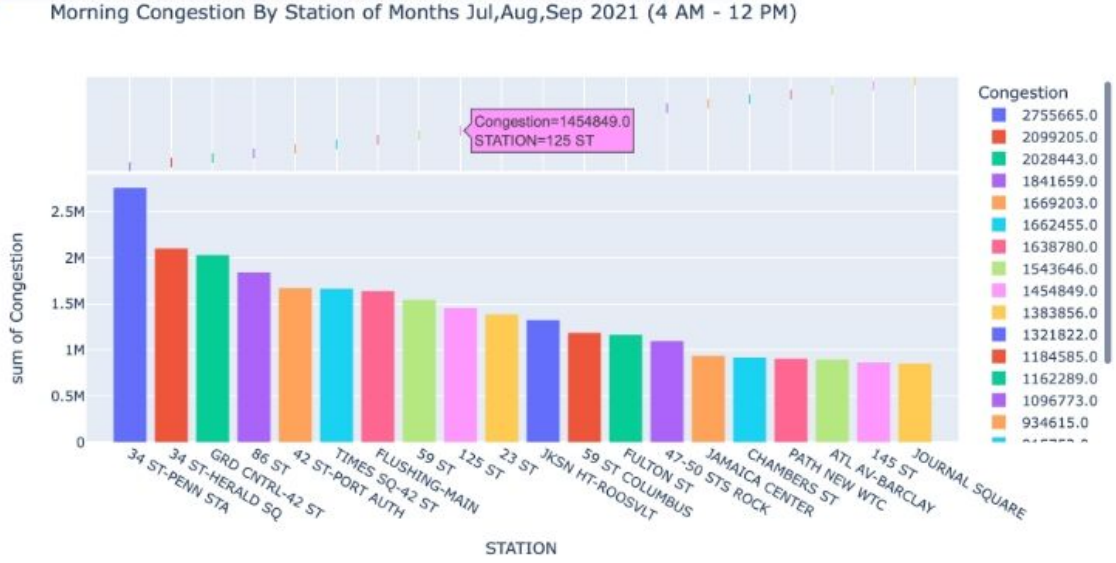
- Predicting most congestion stations of 1 mon.
- Split the time between evening and morning.
- Observing where to dis-congestion during a specific time frame.



PDC FEATURE IMPORTANCE

predicting the whole 3 months





Congestions change between times!

Morning	Evening	High to low
34 ST-PENN	14-St-Union	Highest
34 ST - HERALD Sq	Grand Center-42	Second
Grand Center-42	34 ST-PENN	Third

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DATA MODELING

- Congestions are used to detect on the map between morning and evening.
- Fetching external transportations by map (denoted with blue sqares) ■
- A railroad (tracks) switch management.

More details will be on PDC dashboard online!

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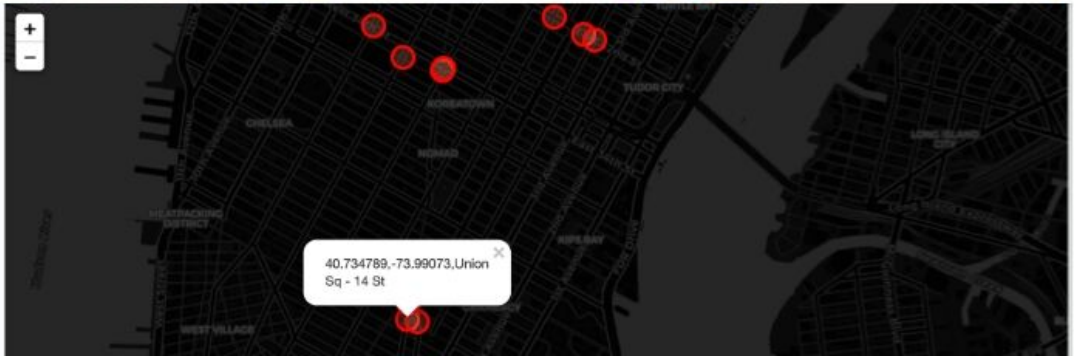

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CONCLOUSION & RECOMMENDATION

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- After observing data, most congestions were found between morning and evening time.
- Better targeting congestions by the map between morning and evening time for faster operations support to these congestions.
- MTA should fetch for buses from the map to help reducing congestions on time that has been detected.
- MTA should use map for tracks switch management and act upon morning and evening congestion (recommended).

DEMO


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Thank you for listening!
PSYCHIC