**DWELL TIME INLFUENCE ON MBTA**

**GREEN LINE**

**Overview:**

**Boston’s Massachusetts Bay Transit Authority (MBTA)** operates the 4th busiest subway system in the U.S. after New York, Washington, and Chicago. If you live in or around the city you have probably ridden on it.MBTA services via subway, Commuter rail ,Ferry and Light rails. High-frequency light rails operations are subject to performance variability due to the impact of passenger loads on the system.

**Problem Statement** :

In the absence of measures to improve the alighting and boarding processes on the platform, on-board congestion can interact negatively so that dwell time increases rapidly between successive stations. This leads in turn to train bunching and deterioration of service quality,thus we feel its important to study dwell time and its effect on mbta performance.

**DATA COLLECTION** :

* Using MBTA real-time API we’re planning to collect travel time and dwell time .
* As the name suggests travel time is the actual travel time between two stations, in our case its between Riverway and Leechmere (Green-E line).
* Dwell time is the waiting time at a stop, it largely depends on the number of passengers entering and exiting the train but adds to the delay overhead. The data is going to be from Jan 2018 to Jan 2019 .
* Additionally ,MBTAr package is going to be used in R which will help in fetching real-time performance metrics of required train line

**PROPOSED SOLUTION**:

* Dwell Time is a function of some parameters that are not always controllable such as door closing and opening mechanisms,vehicle loading conditions (which depend on both train and platform conditions )and passenger arrival rates at station. Nevertheless, a prior knowledge of dwell time at station is going to be useful .
* We’re planning to build a model for dwell time ,so that it can be useful in efficient prediction on train arrivals at each station.
* Efforts can be made at critical stations to enforce smaller dwell-time by modifying some of the parameters.