Task 5.II:

- North Lanes KDE:

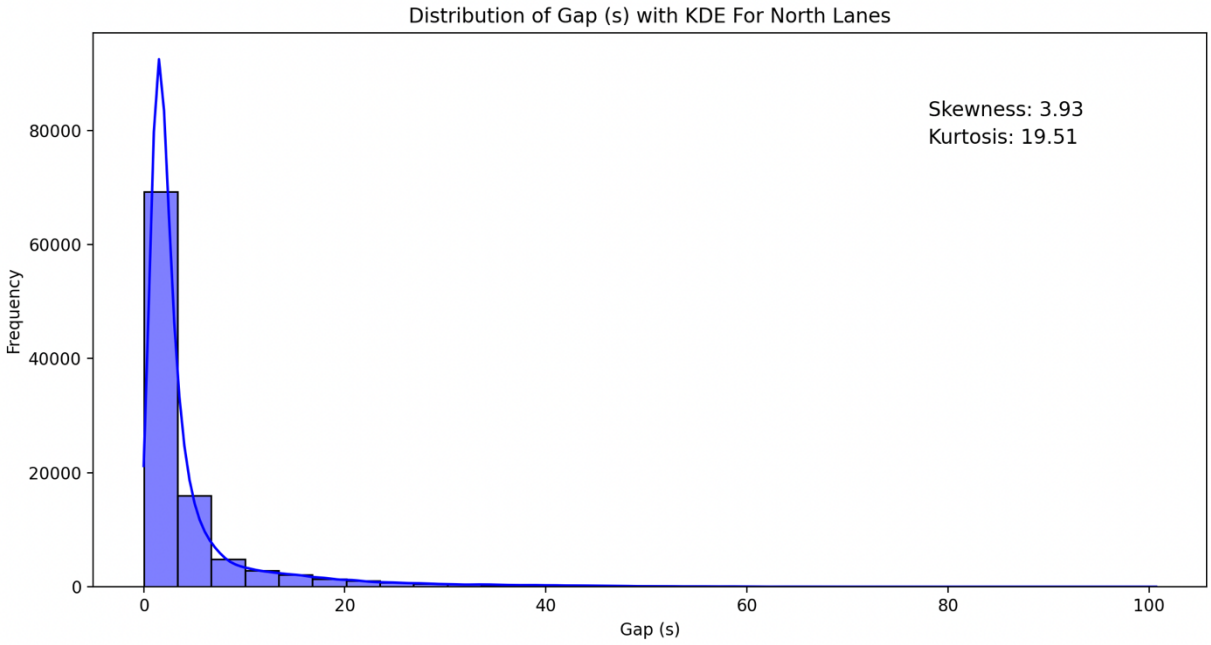

Figure 1: KDE For All North Lanes

```
THIS IS FOR NORTH LANES
count    100283.000000
mean          4.448730
std           6.788815
min           0.001000
25%           1.332500
50%           2.126000
75%           4.095000
max         100.706000
Name: Gap (s), dtype: float64
Skewness:  3.9261950194032966
Kurtosis:  19.51141161343959
MEDIAN:  2.126
MODE1:  1.24
```

Figure 2: detailed profile for north lanes

- NB_MID KDE:

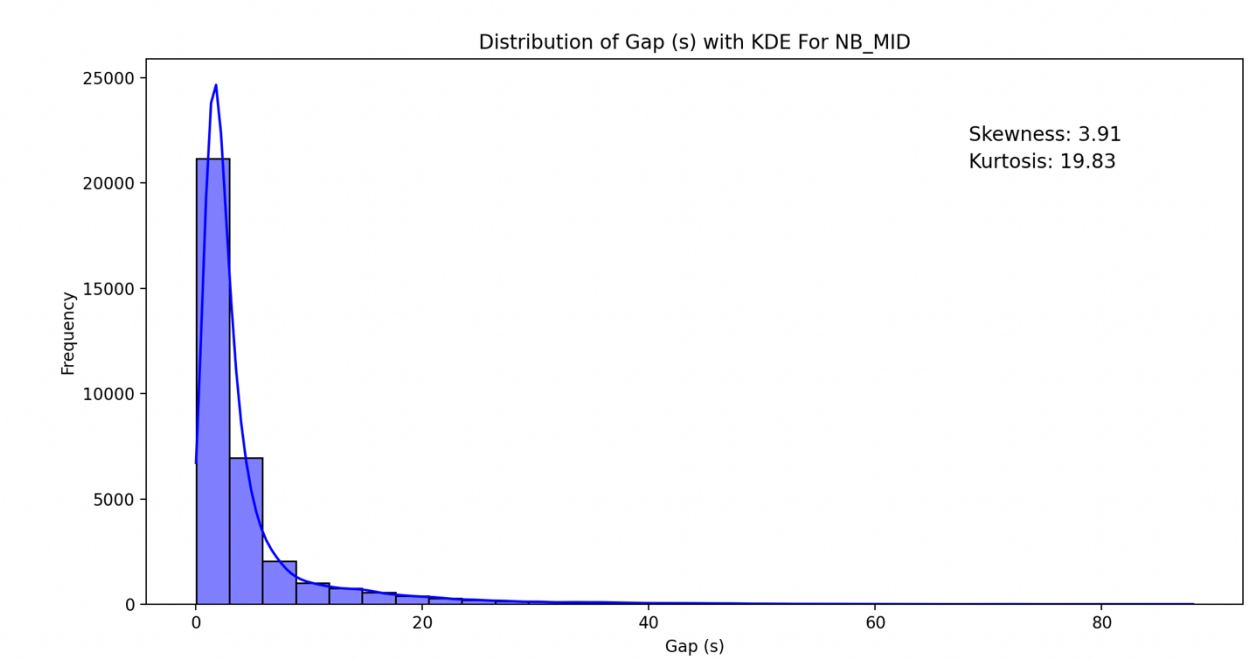

Figure 3: KDE For NB_MID (ALL THE TIMELINE)

```
THIS IS FOR NB_MID
count    34002.000000
mean         4.394434
std          6.311024
min          0.006000
25%          1.400000
50%          2.264000
75%          4.249000
max         88.080000
Name: Gap (s), dtype: float64
Skewness:  3.9093127379398833
Kurtosis:  19.827510872352835
MEDIAN2:  2.264
MODE2:  1.24
```

Figure 4: detailed profile for NB_MID

- NB_MID 7AM-19PM KDE Parts:

```
7AM-10AM PROFILE
count    11041.000000
mean         3.187579
std          4.313101
min          0.006000
25%          1.360000
50%          1.994000
75%          3.079000
max         51.618000
Name: Gap (s), dtype: float64
Skewness:  4.681067887253849
Kurtosis:  27.44181440932211
MEDIAN3:  1.994
MODE3:  0.94
```

Figure 5: detailed profile for 7AM-10AM

```
10AM-13PM
count    7337.000000
mean        5.273749
std         6.808618
min         0.020000
25%         1.440000
50%         2.715000
75%         5.825000
max        64.647000
Name: Gap (s), dtype: float64
Skewness:  2.963308054432837
Kurtosis:  11.100020676418614
MEDIAN4:  2.715
MODE4:  1.24
```

Figure 7: detailed profile for 10AM-13PM

```
13PM-16PM
count    6720.000000
mean        5.685139
std         7.953268
min         0.023000
25%         1.445750
50%         2.692500
75%         5.990250
max        88.080000
Name: Gap (s), dtype: float64
Skewness:  3.2499521608243778
Kurtosis:  13.504111814011743
MEDIAN5:  2.6925
MODE5:  1.548
```

Figure 8: detailed profile for 13PM-16PM

```
16PM-19PM
count    8904.000000
mean        4.192257
std         6.274046
min         0.009000
25%         1.410750
50%         2.240000
75%         4.023250
max        72.005000
Name: Gap (s), dtype: float64
Skewness:  4.471923211534314
Kurtosis:  25.15934053124973
MEDIAN6:  2.24
MODE6:  1.04
```

Figure 6: detailed profile for 16PM-19PM

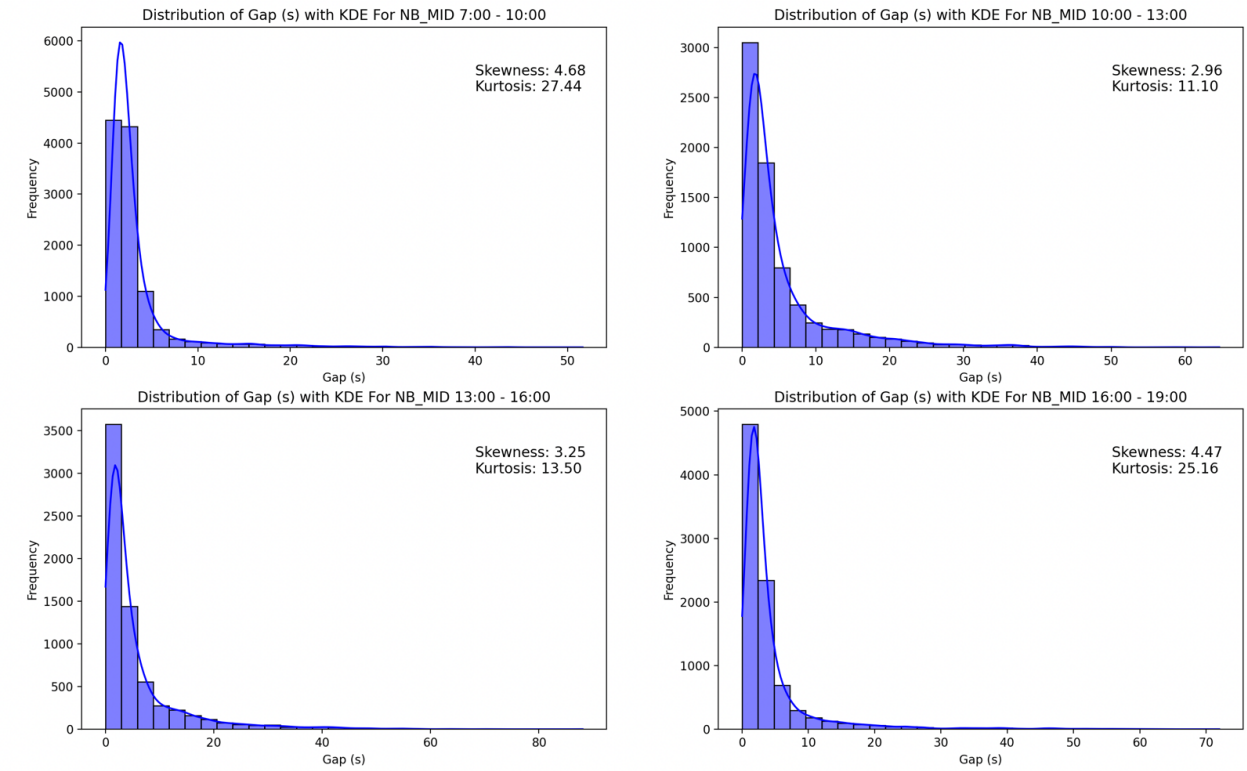

Figure 9: 4 Parts of hours for NB_MID

Comparison between Mean and Median to prove Median is a better suitable candidate:

```
SKEWNESS:  3.9093127379398833
NB_MID before insertion
count    34002.000000
mean         4.394434
std          6.311024
min          0.006000
25%          1.400000
50%          2.264000
75%          4.249000
max         88.080000
```

```
SKEWNESS FOR NB_MID:  3.9484946439854247
NB_MID
count    34687.000000
mean         4.394434
std          6.248396
min          0.006000
25%          1.414000
50%          2.307000
75%          4.394434
max         88.080000
```

Figure 10: Before inserting Mean in missing Values

Figure 11: After inserting Mean in missing values

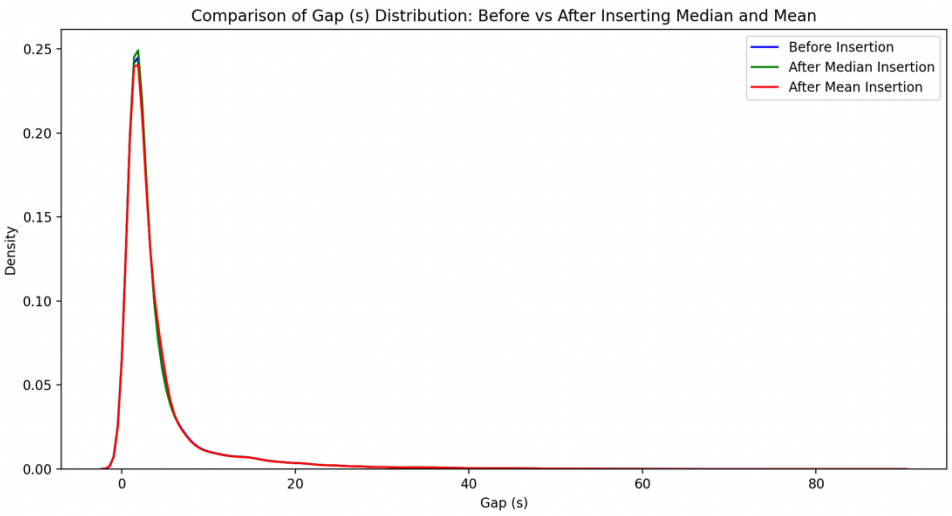

Figure 13: After inserting Median

```
05339522865
ID:  3.9546005339522865

0000
2362
6423
6000
4000
4000
2000
0000
```

Figure 14: Comparison between Median and Mean graphs

```
SKEWNESS:  3.9093127379398833
NB_MID before insertion
count    34002.000000
mean         4.394434
std          6.311024
min          0.006000
25%          1.400000
50%          2.264000
75%          4.249000
max         88.080000
```

Figure 15: Before inserting Mode in missing Values

```
SKEWNESS FOR NB_MID:  3.9467666633493677
NB_MID
count    34687.000000
mean         4.332140
std          6.263792
min          0.006000
25%          1.358500
50%          2.216000
75%          4.179000
max         88.080000
```

Figure 16: After inserting Mode in missing values

```
[9950 rows x 10 columns]
9950
15033
27.092510144349095
AVG SPEED IN KM:  43.60106027570677
Jounrey Time:  6.687910756208628
Missing speed values:  0
100.0
```

Figure 17: Journey Time in Minutes

```
Number of all rows in Tuesday between 7AM - 19PM:  201125
Number of missing gap rows:  3949
number of non empty cells:  197176
98.03654443753885
```

Figure 18: Column Completeness