

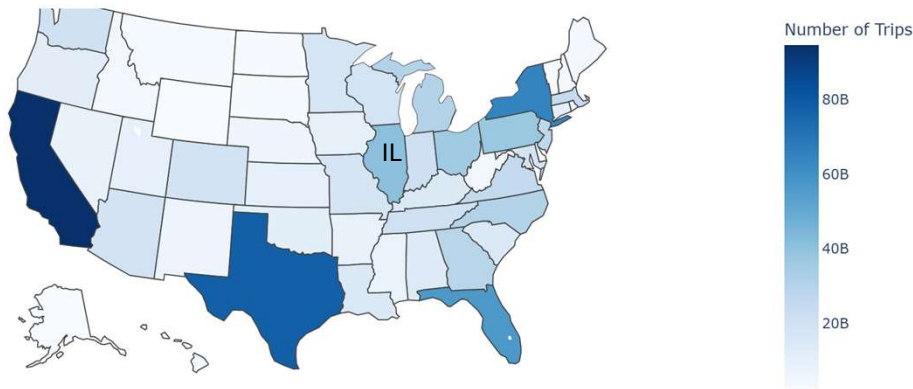
# TRIPS IN COOK COUNTY, ILLINOIS USA

Nurul Hakimah Mohd Zaki

# What is the problem in Cook County?

- Chicago is the second most congested city in the world in 2022.

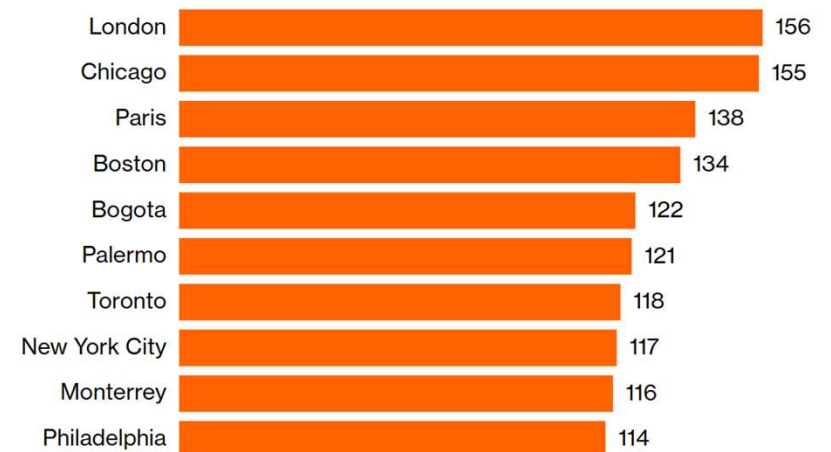
Number of Trips by State in 2022



**Figure 1.** Total Number of Trips in 2022

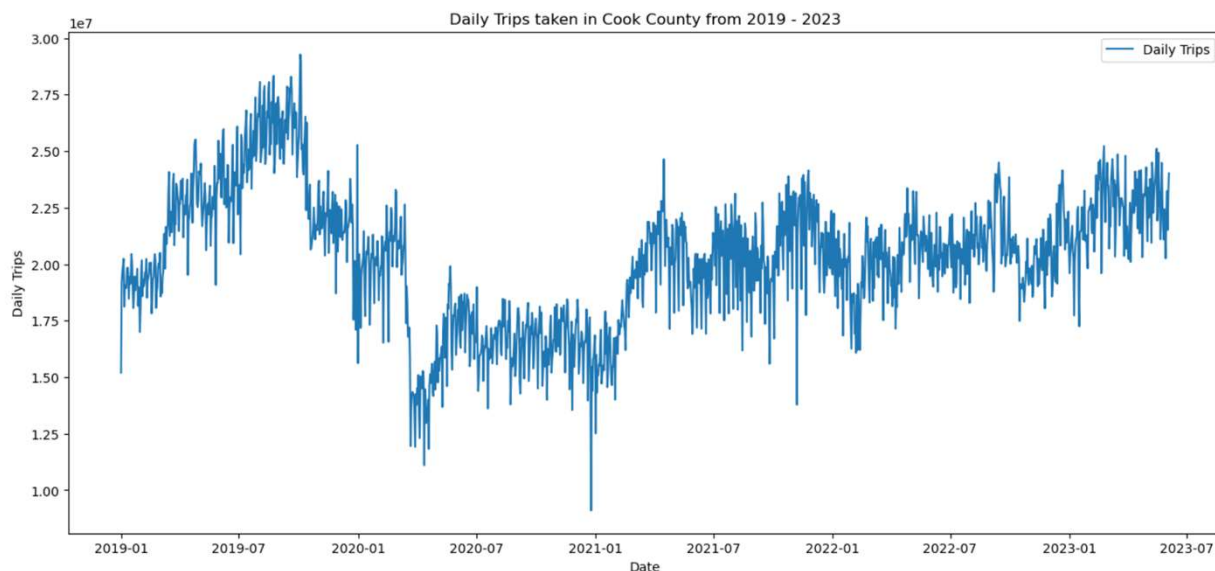
**Cities Where People Spent the Most Time in Traffic**

■ Average number of hours each driver spent in traffic in 2022



**Figure 2.** Most Congested Cities in 2022

# Population Movement from 2019 – 2023.

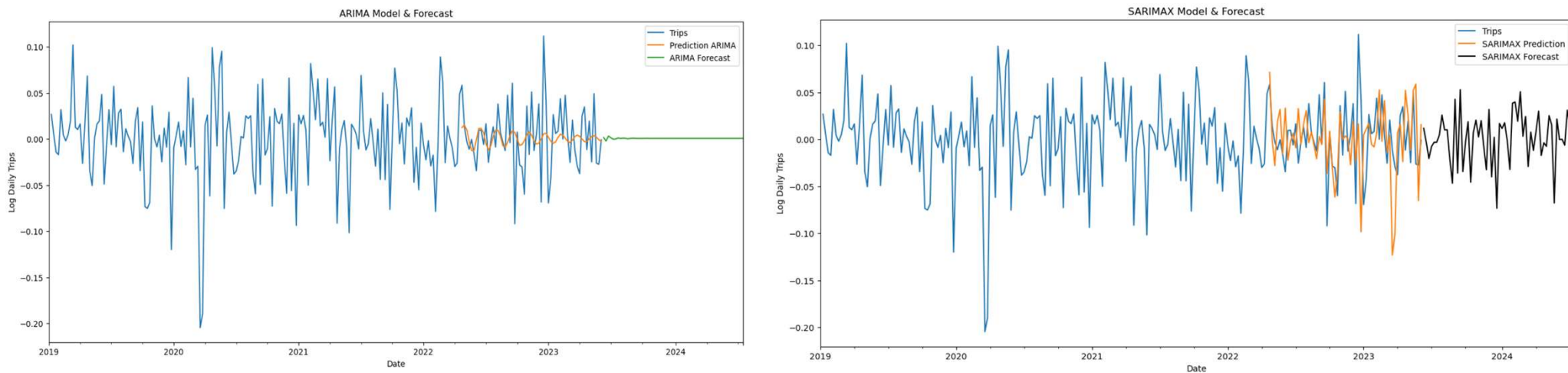


**Figure 3.** Daily Trips from 2019 - 2023

Year	Average Daily Trips
Jan 2019	19 Million
Jan 2023	21 Million

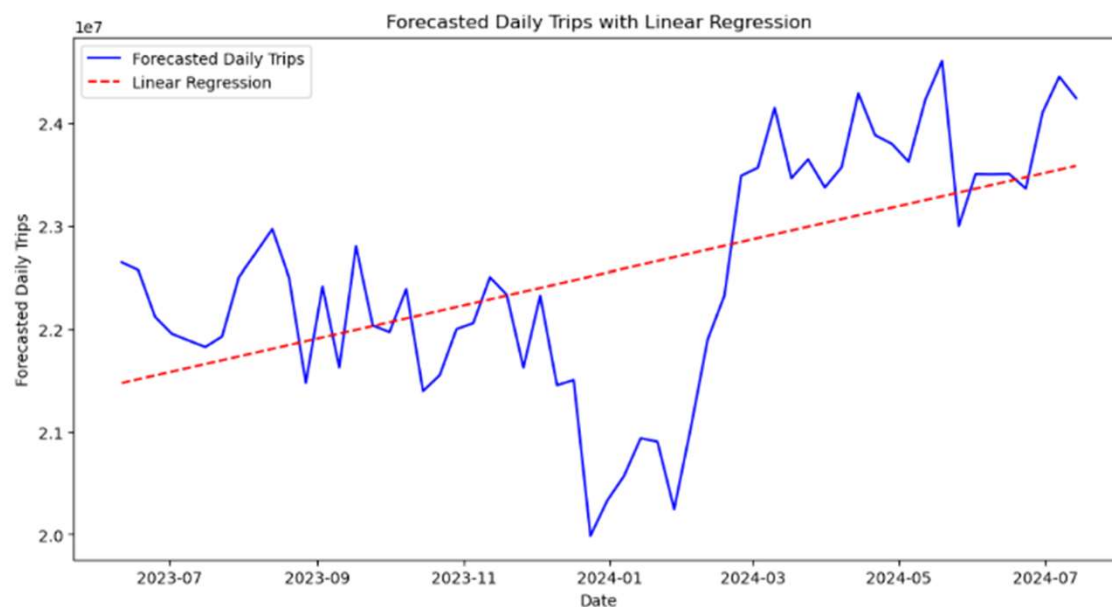
**Table 1.** Daily Trips Comparison in 2019 and 2023

# Comparison ARIMA vs SARIMAX Model



**Figure 4.** Comparison ARIMA vs SARIMAX Model

# 1-year Forecast



**Figure 5.** Forecasted Daily Trips in 1 year

Year	Average Daily Trips
June 2023	22.3 Million
July 2024	24.0 Million
+1.72 Million (+7.7%)	

**Table 3.** Daily Trips 1-Year Increment

# Proposed Solution

- Applying big data to create intelligent transportation systems is key to solving urban mobility problems.
- Integrate data analytics on mobility, traffic, traffic signals parking & population movement.
- Collaboration between city planners and engineers in making data-based decisions. (Inrix, 2023)

# Reference

- *Trips by Distance (US)*. (2023, August 3). Kaggle. <https://www.kaggle.com/datasets/adelanseur/trips-by-distance>
- Chandler-Wilde, H. (2023, January 10). *Bloomberg - These are the world's most congested cities*. [www.bloomberg.com](https://www.bloomberg.com). Retrieved May 31, 2024, from <https://www.bloomberg.com/news/articles/2023-01-10/these-are-the-world-s-most-congested-cities>
- INRIX 2022 Global Traffic Scorecard: London Tops List as Most Congested City, U.S. Cities Inch Closer. (2023). In <https://inrix.com>. Retrieved May 25, 2024, from <https://inrix.com/press-releases/2022-global-traffic-scorecard-uk/>
- Learnerea. (2022, December 8). *Time Series Analysis using Python| ARIMA & SARIMAX Model Implementation | Stationarity Handling* [Video]. YouTube. <https://www.youtube.com/watch?v=O5pataOw33Y>

Thank you