

UNDERSTANDING TAXI DEMAND USING A DATA SCIENCE APPROACH



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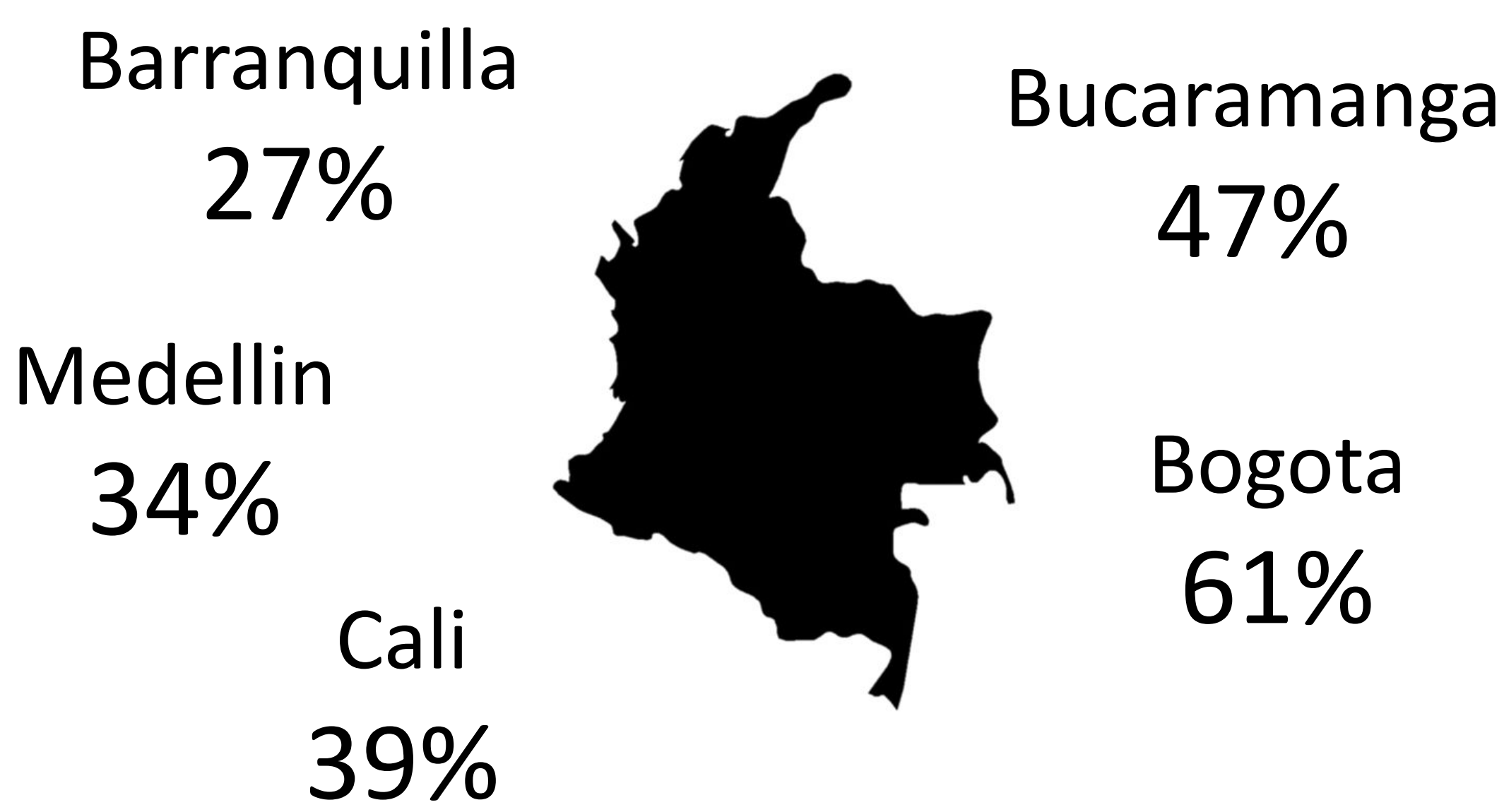
01 The Background

Taxi services are an essential part of urban transportation, distinguished by its reliability and flexibility due to point-to-point service, 24/7 availability, exhaustive coverage, and security perception.

47M
worldwide
daily trips

32.5bn
US yearly
revenues

However, traditional taxi systems suffer from inefficiencies. Passengers experience long waiting times for a taxi to be available. Taxi drivers roam vacant for extended periods of time. General dissatisfaction levels with taxi services are high in Colombia:



02 The Data

Requests and cancellations dataset from Taxis RCP.



Request
time



Pick-up
location



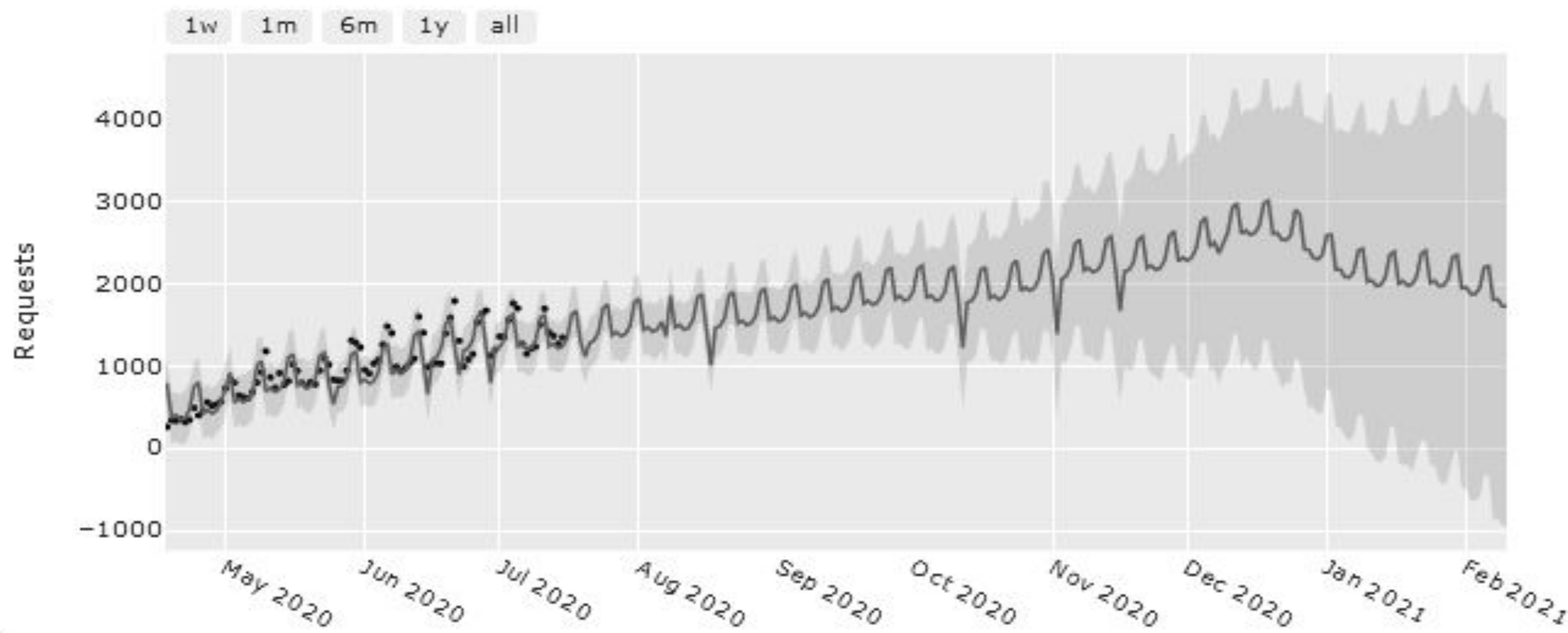
3.5 years
history

03 The Model

Data analysis provides insight on taxi demand behavior. In particular, its seasonal patterns

	High demand	Low demand
Monthly	December	January, February
Daily	Fridays, Saturdays	Monday-Wednesday
Hourly	6-9am, 2pm, 6-9pm	0-3am, 11am

Two different statistical models were fitted to the data. First, a traditional time-series ARIMA model. Second, the Prophet model, which is an open-source time-series forecasting library made available by Facebook's core data science team.



Highlights

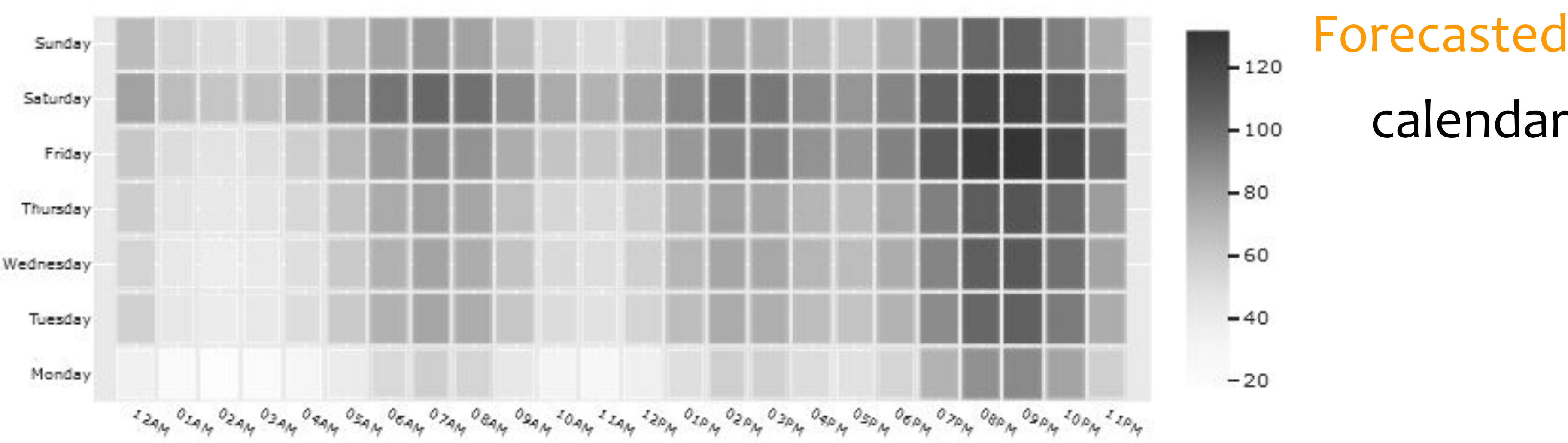
- Taxi Systems can be improved by Data Science
- Analysis shows taxi demand is foreseeable, and can be predicted by forecasting models
- We developed a web application providing data insights and prediction of taxi demand

04 The Results

Our application is available online!



SCAN ME



Geolocation
of hot spots



Client
segmentation