



otonomo

*Fleetonomy*

Solving Critical Optimization  
Problems for Mobility Services  
and Autonomous Vehicles

## Challenge

The mobility space faces significant disruptions today. The emergence of automation technologies, increased data volumes flowing from vehicles, and changes in existing business models are bringing new challenges to fleet owners and smart mobility providers. Optimizing fleets involves looking ahead seconds, minutes, days, and weeks to determine where to locate idle vehicles to maximize their utilization, which vehicles to dispatch, when to perform maintenance, where to place electric vehicle charging stations, and how many vehicles to put on the road every day and every hour. Fleetonomy is currently working with a variety of companies in the mobility ecosystem to apply its fleet optimization solutions, including demand prediction, fleet redistribution, and smart dispatch, to their existing fleet management services.

Building and training these machine learning models requires input from massive quantities of data, in particular historical data from actual vehicles. Automotive data must be matched to related datasets such as location, day of the week, weather, traffic, nearby events, and more.

“With rich data on traffic flow in a particular geographic location, Fleetonomy can deeply understand and predict demand for various mobility services such as ride hailing, car sharing, car rental, vehicle subscription services, and ultimately autonomous vehicle trips,” says Lior Gerenstein, co-founder and chief technology officer at Fleetonomy. “Fleetonomy’s platform can then use these predictions to simulate how such services would behave in that location and manage them more efficiently in real time.”

## Profile

Fleetonomy offers the next generation of data-driven fleet management solutions to plan, optimize, and operate smart mobility services.

## Highlights

- Built simulation for predictive models using historical trip data matched to related datasets
- Proved that its optimization solution improves key performance indicators for fleets
- Integrated with the Otonomo Platform in three days

## Use Cases

Fleet management optimization and demand prediction

## Automotive Data Types

Anonymous  
Historical

## Automotive Data Types

Vehicle location  
Trip start time  
Trip start location  
Trip end time  
Trip end location  
Trip duration

## Cloud Platform

Cloud-agnostic, Microsoft  
Azure compliant

## CASE STUDY

Fleetonomy did the initial work on its models using multiple data sources, including trips data gathered from smartphones, public transportation datasets, and by directly integrating connected car data from vehicle fleets. However, some of these data sources have limitations:

- Smartphone data does not provide enough accuracy because it includes data points from people walking, cycling, or taking the bus. It also does not contain exact markers denoting when trips started or ended.
- Public datasets are only available from a few geographies such as New York and Singapore, and the limited number of vehicles (public transportation and taxis) makes it difficult to extend the models to trucks and private cars.
- OEM data can be hard to integrate and use for purposes outside of vehicle operations. “Each OEM has unique systems, datasets, and formats,” Gerenstein explains.



**Lior Gerenstein**

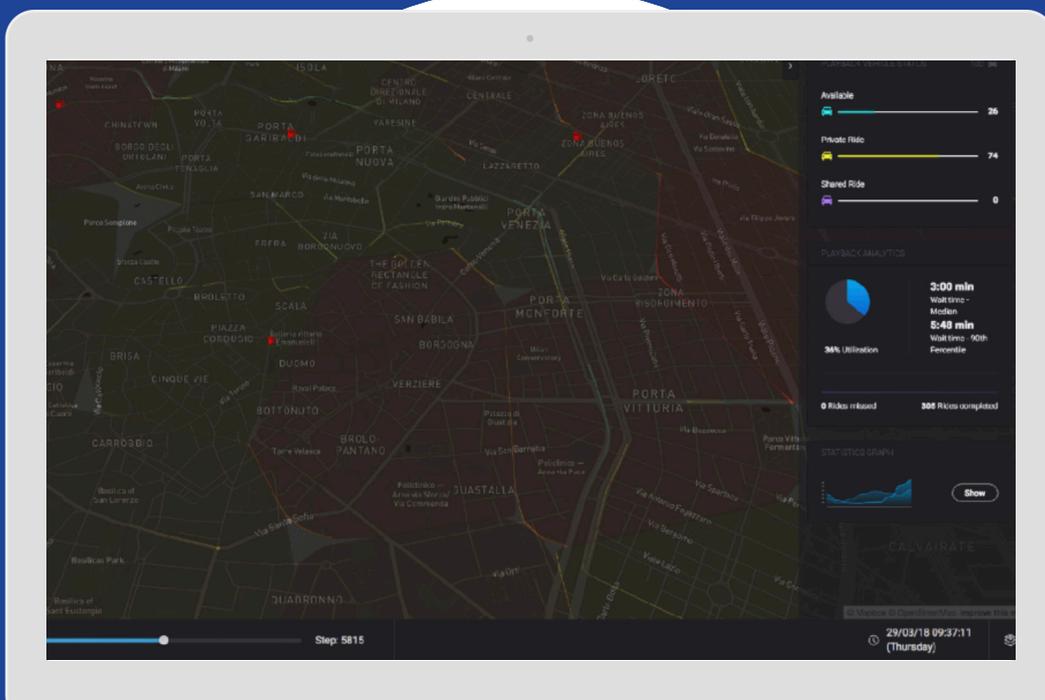
co-founder and chief technology officer, Fleetonomy



*“As we looked into different methods for getting historical data, we found that Otonomo offered the best opportunity to use data from real vehicles in our models. It’s easy, and we didn’t have to invest much time to get it to work.”*

## Why Otonomo?

Fleatonomy turned to Otonomo's automotive data services platform to enrich the scope of the historical data for its models. "As we looked into different methods for getting historical data, we found that Otonomo offered the best opportunity to use data from real vehicles in our models," Gerenstein says. "It's easy, and we didn't have to invest much time to get it to work." The fact that Otonomo could provide both individual data points and aggregated data points (trips) saved additional engineering resources.



Providing both individual and aggregated data saves resources and enriches the scope of the historical data used for Fleatonomy's models

## Solution

The Fleetonomy engineering team began by integrating data from a major metropolitan area in Europe. The process of bringing the data into its model took only a couple of days. “The data from Otonomo was very well structured and formatted, and the APi was clean,” Gerenstein reports. The team then built a simulation to show how Fleetonomy predictive models would improve key performance indicators such as vehicle utilization rates, required fleet size, and average waiting time for a ridesharing customer.

“By being able to demonstrate significant KPI differences before and after the simulation uses our model, Fleetonomy helps its potential customers build business cases for deploying our service,” says Israel Duanis, co-founder and chief executive officer at Fleetonomy. “Using this tool has great value for us during our sales process.”

*“For us, the value of Otonomo sums to demonstrable measurements, which are shown both in the planning phase using simulations and in real time with operational services.”*

Lior Gerenstein

## Results

The simulation indicates that using OEM data for demand prediction decreases the median wait times for a ride-hailing customer from 330 to 190 seconds, a reduction of more than 40%. Furthermore, Fleetonomy’s simulation, again utilizing OEM data provided by Otonomo, has shown that the same service level can be achieved using five fewer vehicles. These metrics represent a significant reduction in the size of a large fleet.

“Being able to have a single provider for automotive data, so we can integrate once and get coverage all over Europe and the United States, is a huge win for our business,” Gerenstein concludes. “It allows us to enrich our models and provide incremental value to our customers. For us, the value of Otonomo sums to demonstrable measurements, which are shown both in the planning phase using simulations and in real time with operational services.”



## About Otonomo

The Otonomo Automotive Data Services Platform fuels a network of 15 OEMs and more than 100 service providers. Our neutral platform securely ingests more than 2 billion data points per day from over 18 million global connected vehicles, then reshapes and enriches it, to accelerate time to market for new services that delight drivers. Privacy by design is at the core of our platform, which enables GDPR and other privacy-regulation-compliant solutions using both personal and aggregate data. Use cases include emergency services, mapping, EV management, subscription-based fueling, parking, predictive maintenance, usage-based insurance, media measurement, in-vehicle package delivery, and dozens of smart city services. With an R&D center in Israel and a presence in the United States, Europe, and Japan, Otonomo's investors include Bessemer Venture Partners, Aptiv, Dell Technologies Capital, Hearst Ventures, StageOne Ventures, and Maniv Mobility.