“When will the food get here?”

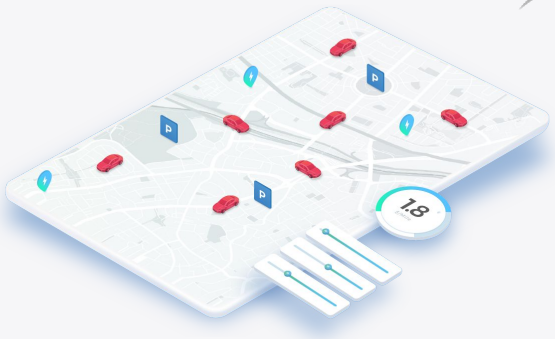
How ETAs are calculated and why they’re so wrong

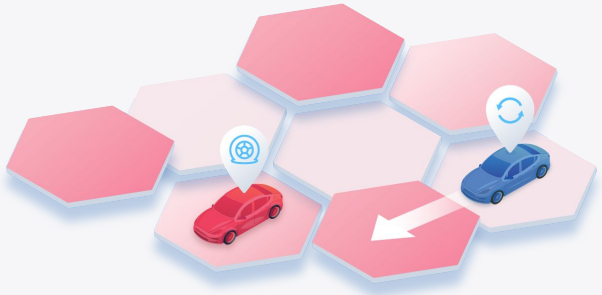
Autofleet - Optimizing Fleets, Making the World Better

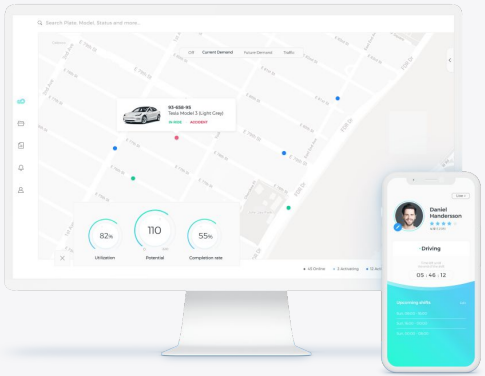
Simulator
Accelerate fleet innovation through simulation

Vehicle as a Service
Optimize existing business models to maximize fleet performance

Ride as a Service
Launch new on-demand business models and mobility services







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3 Million chances per month to F-up ETA Calculations

Tens of thousands of vehicles

Activity in over 15 countries

Over 3M rides processed per month

Ford
avis budget group
Hertz
HONDA
Honda Mobility Solutions
Bluebird
revel
ALTO
zipcar
FUJITSU
SUZUKI
KEOLIS
WIND

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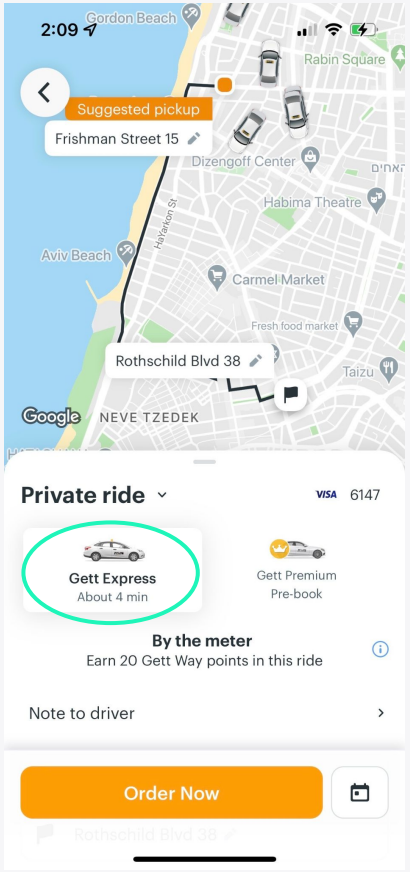
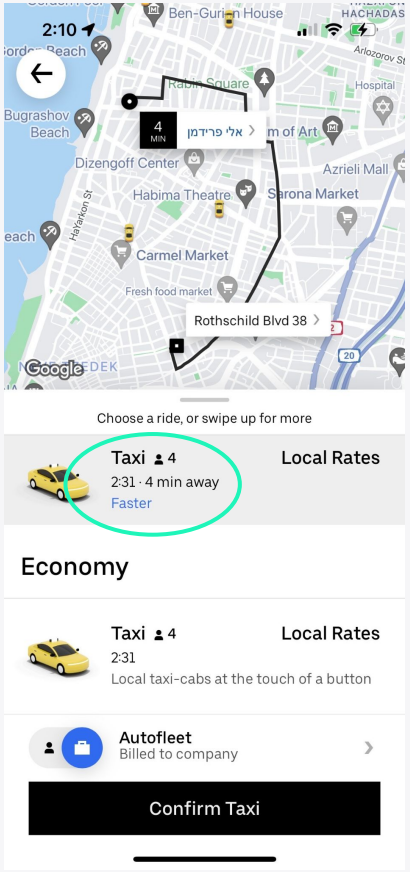
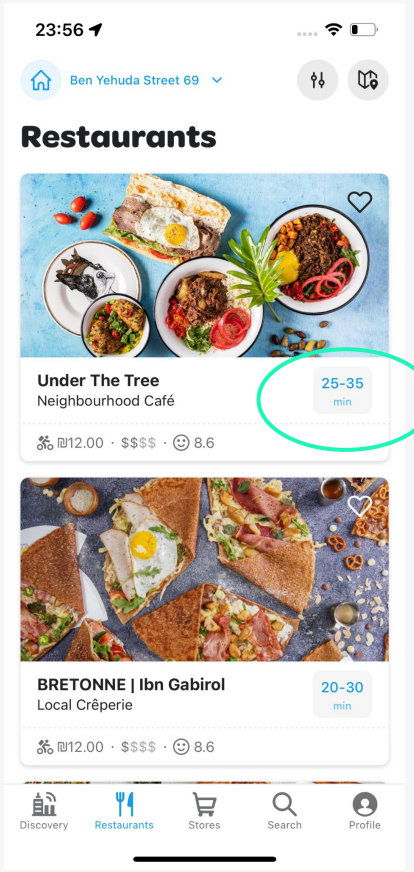
ETA - Estimated time of arrival







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The 3 Commandments of ETA Calculations and Customer Expectations

Thou shalt show attractive ETAs

Thou shall show accurate ETAs

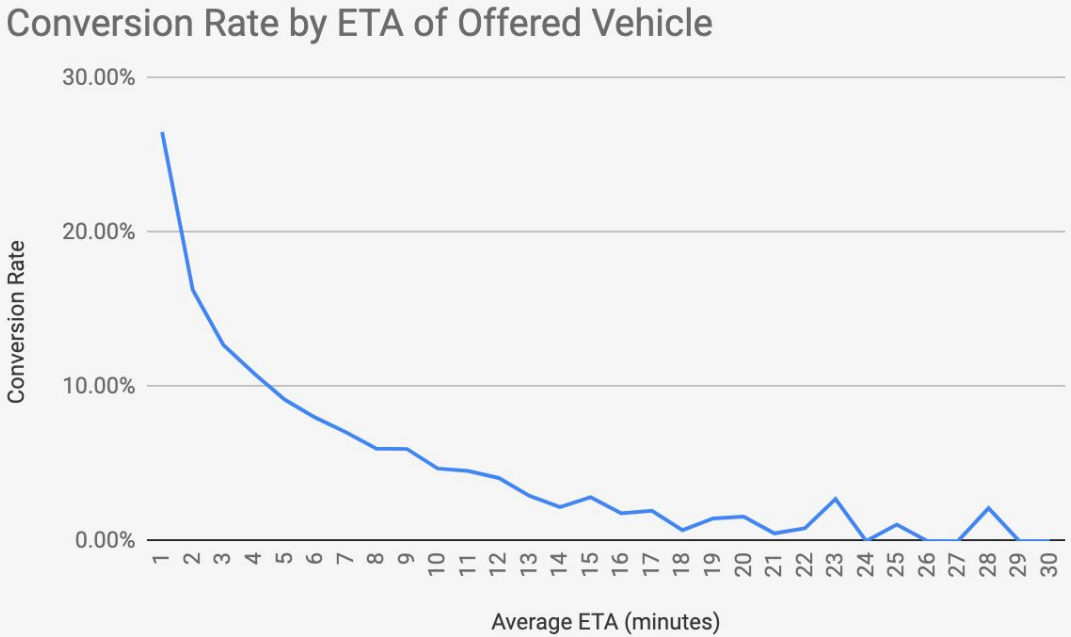
Thou shall show stable ETAs

Commandment 1: Attractive ETAs

Conversion rate falls significantly as ETA goes up.

High ETAs are bad for business.

Graph at right is typical of street-hail/ taxi business. For others, the curve may differ



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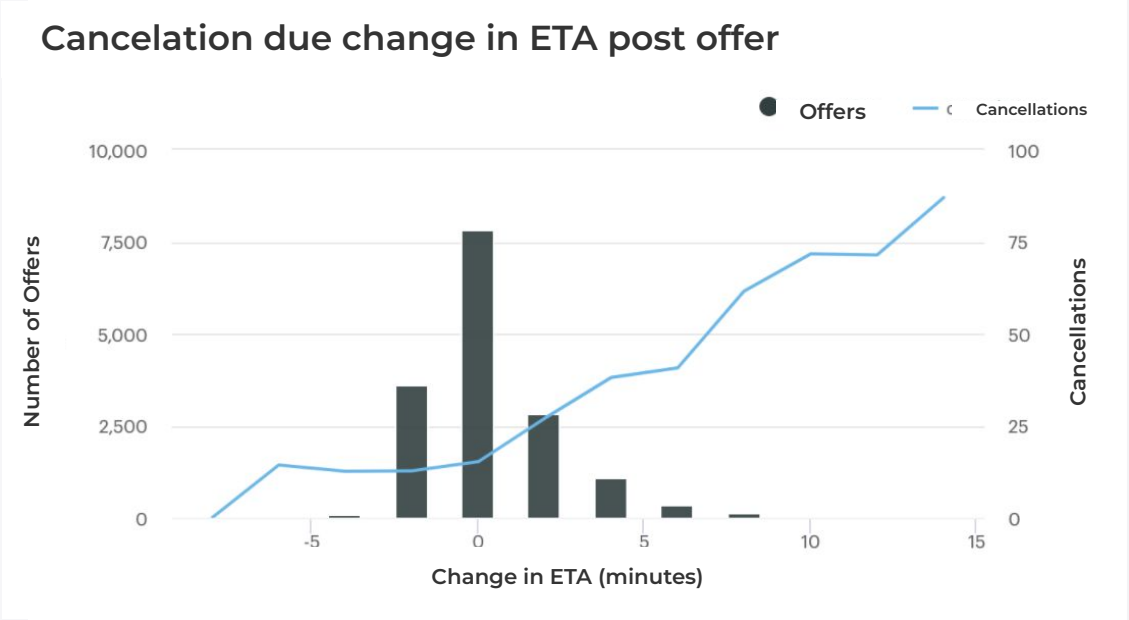
Commandment 2: Accurate ETAs

Commandment 2 prevents operators from trying to boost conversion rate through presenting incorrect ETAs.

The ETA must be accurate and aligned with what was shown to the customer a moment ago



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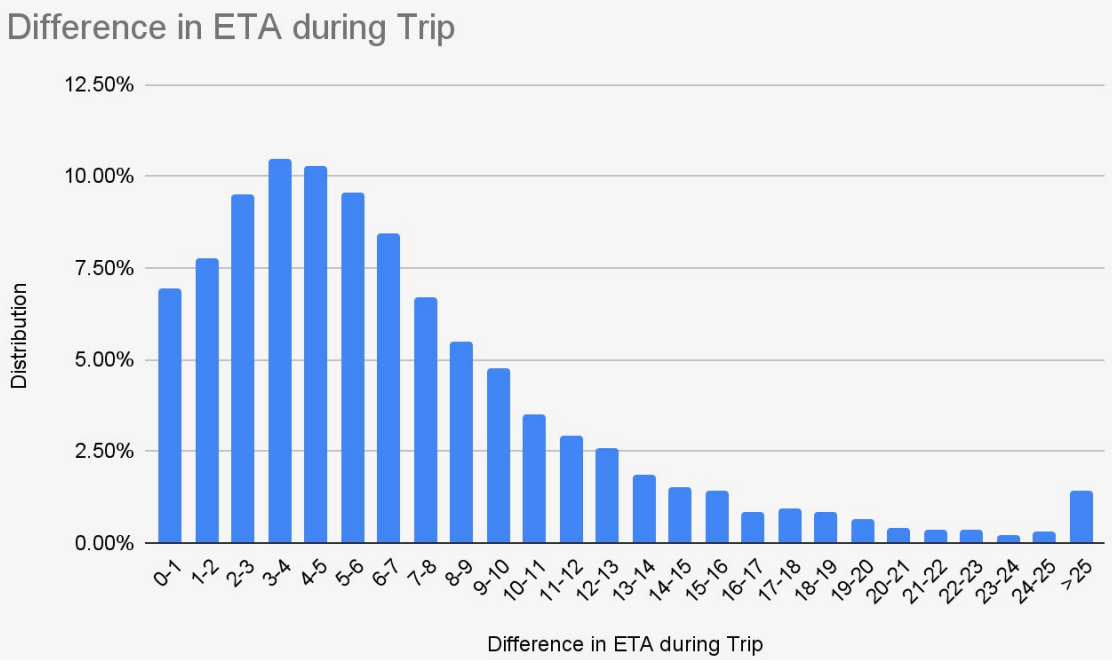
Commandment 3: Stable ETAs

Being right isn't good enough: ETAs must remain stable in order to maintain customer satisfaction. Large jumps could cause cancellations or incorrect waiting



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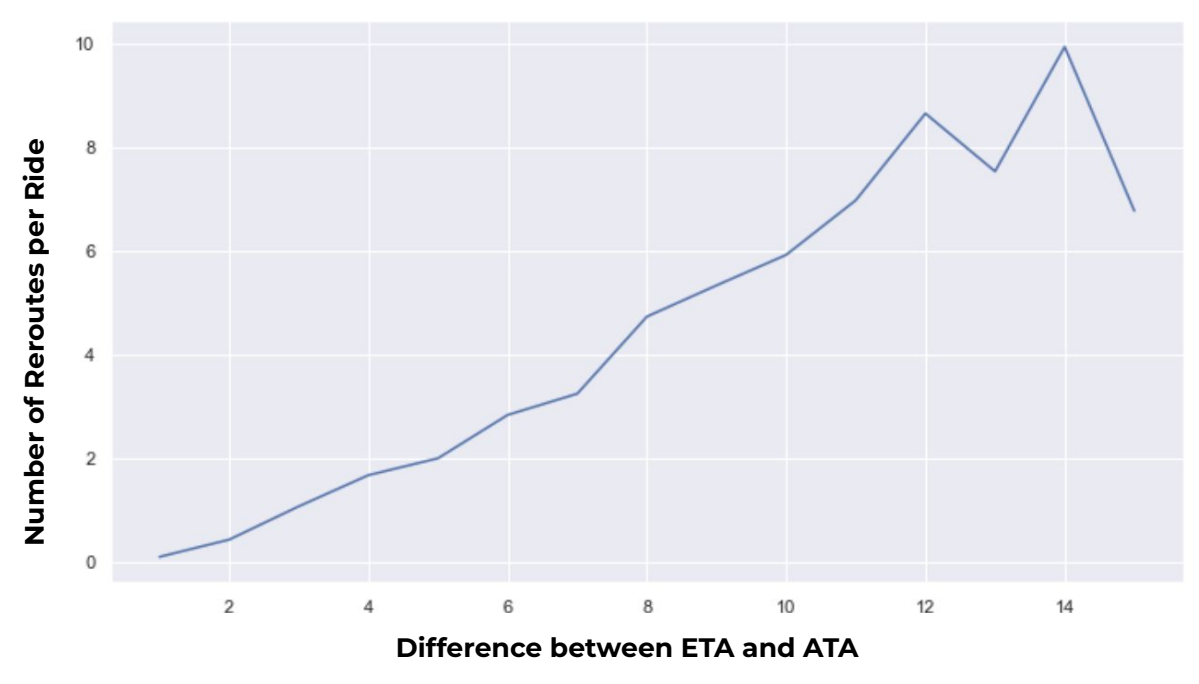
Mapping and Routing Toolbox

Map agnostic Routing Engine

- Work across multiple providers, comparing and leveraging each to achieve the optimal result
- Adjust maps provider settings for optimistic/pessimistic, best guess
- Add abstraction layer within platform to manipulate provider responses
- Redundancy, redundancy, redundancy

Impact of Driver Behaviour

The longer the delay in arrival time, the more reroutes sent to the driver → **drivers who do not follow routing directions cause larger delay**



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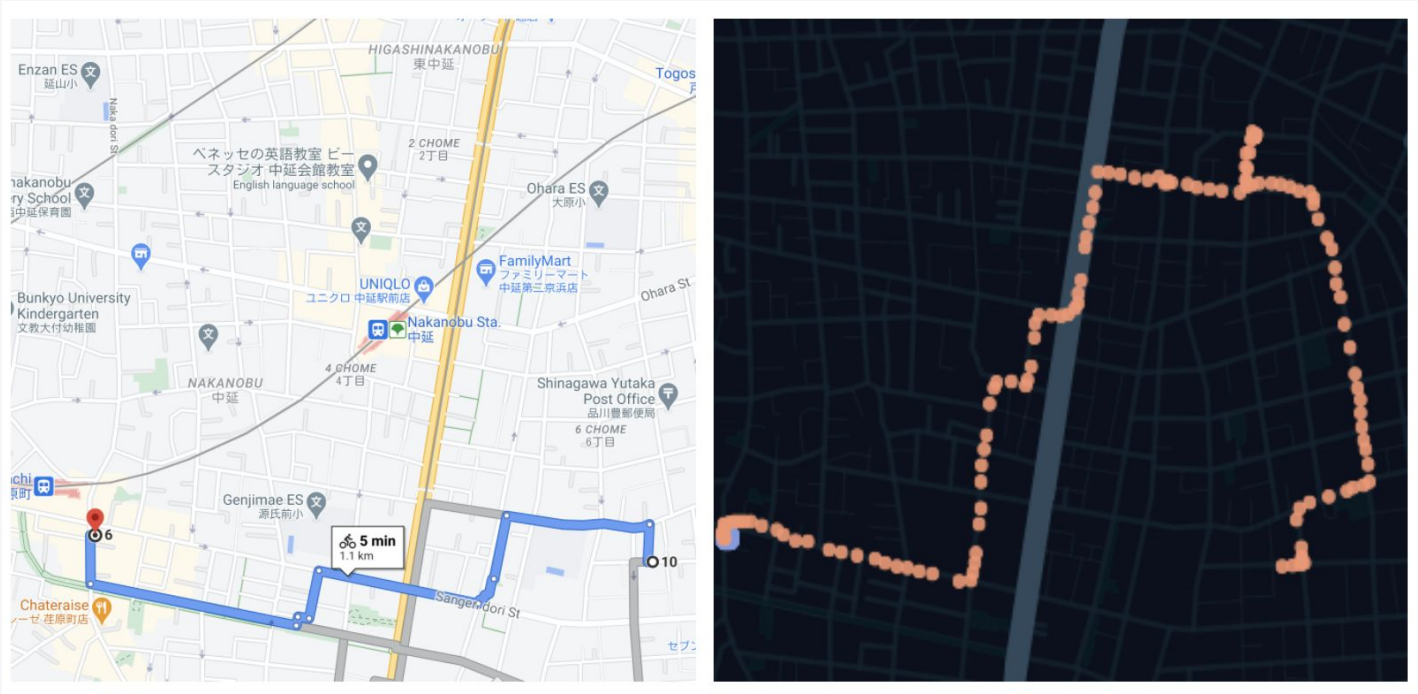
Sample - Driver Deviating from Route

Driver (on bicycle) did not follow route, caused 60% delay in arrival time



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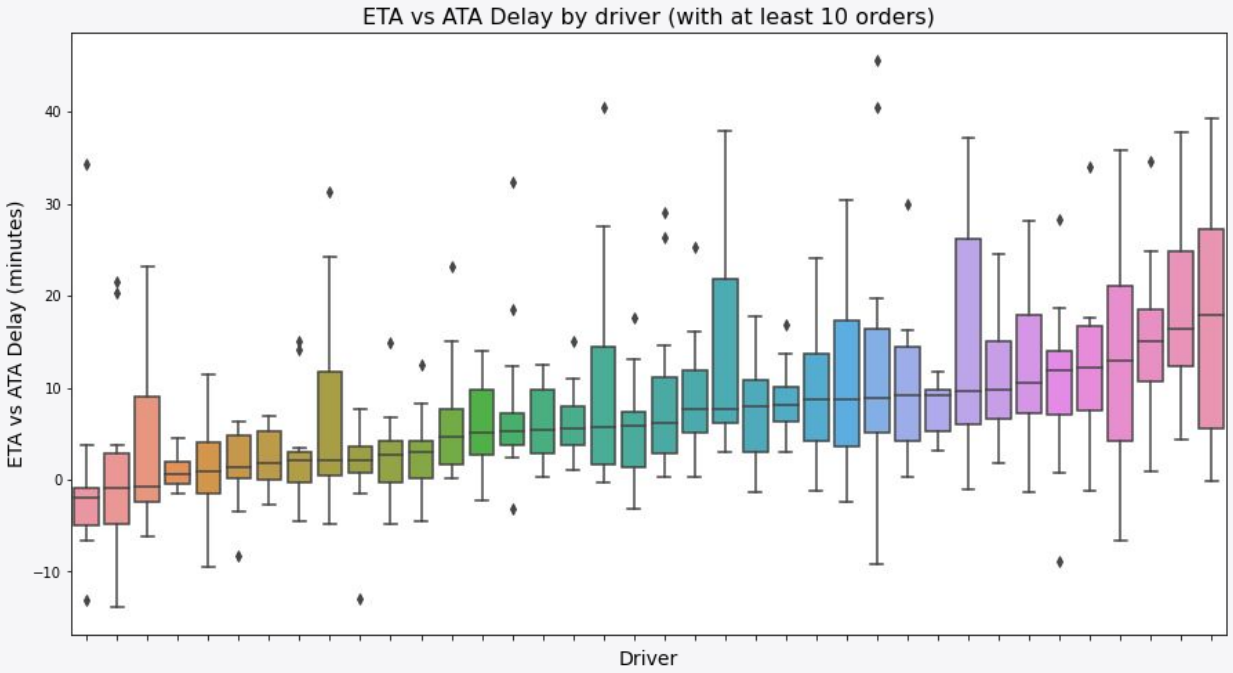
Impact of Driver Behaviour

Certain drivers are much more likely to arrive late to projected ETAs



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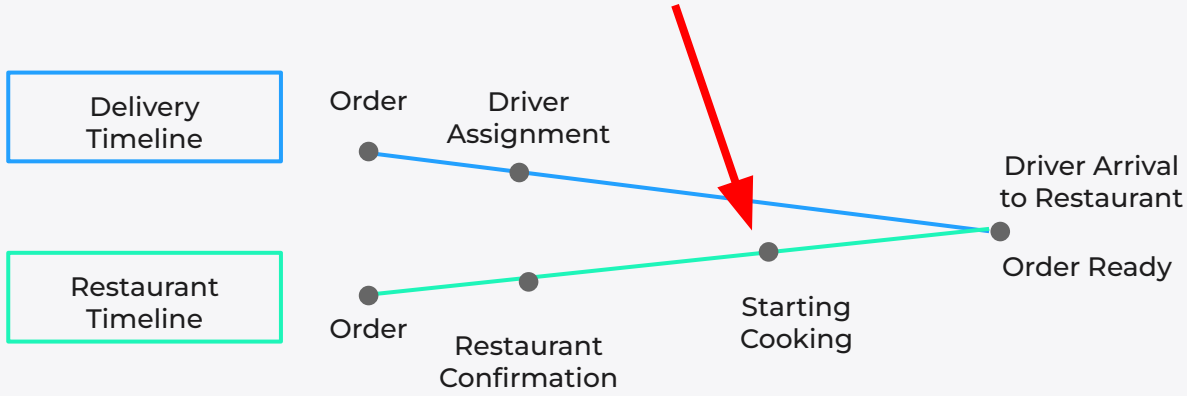
Operation Specific Route Calculations: Cooking Time

Goal

- **Reduced Delivery Time:** Reduce delivery time by reducing the time the driver is waiting for the food

- **Better Food Quality:** Increase food quality by reducing the time the food is waiting for the driver



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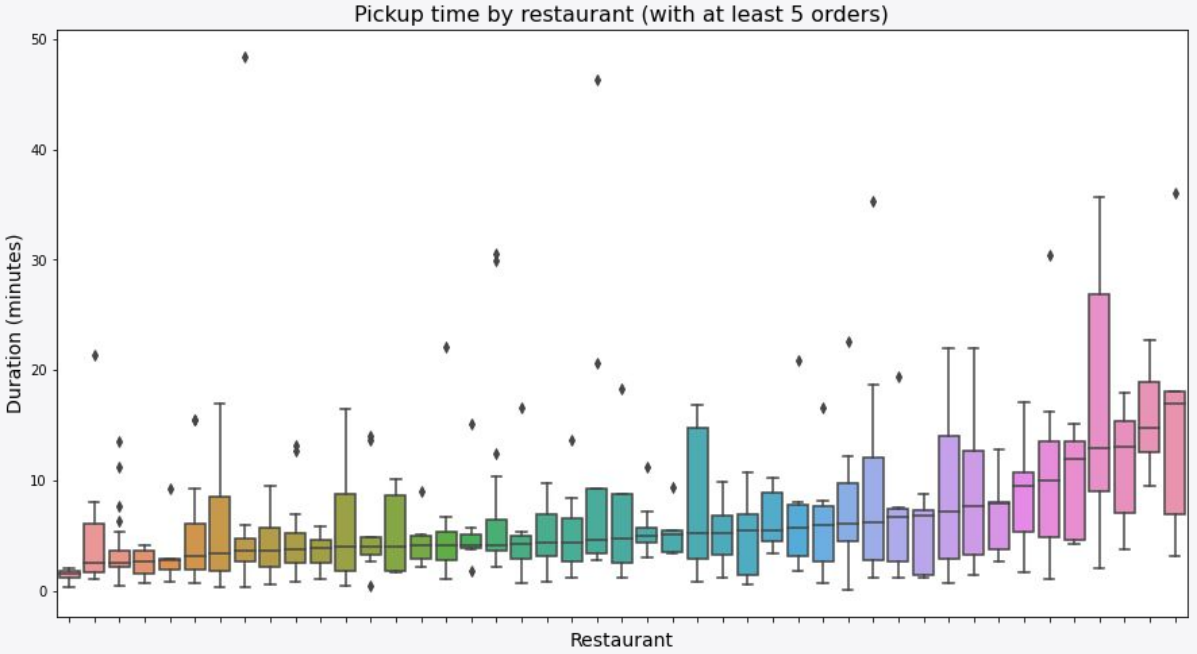
Duration at Pickup - by Restaurant

Some restaurants take longer with order preparation than others, potentially causing the additional time at pickup at those specific locations



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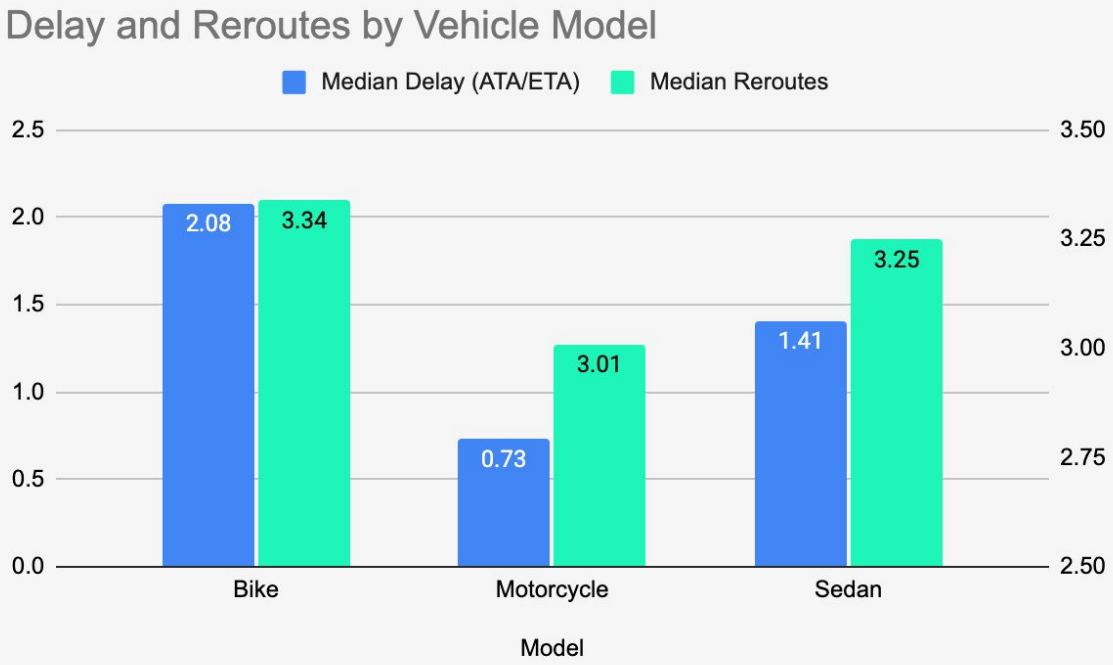
Vehicle Specific Route Calculations

Bicycles have the longest delay in ETA/ATA and also the highest frequency of reroutes.

If model considerations are working, ETA/ ATA difference should be equally small for all vehicle models.



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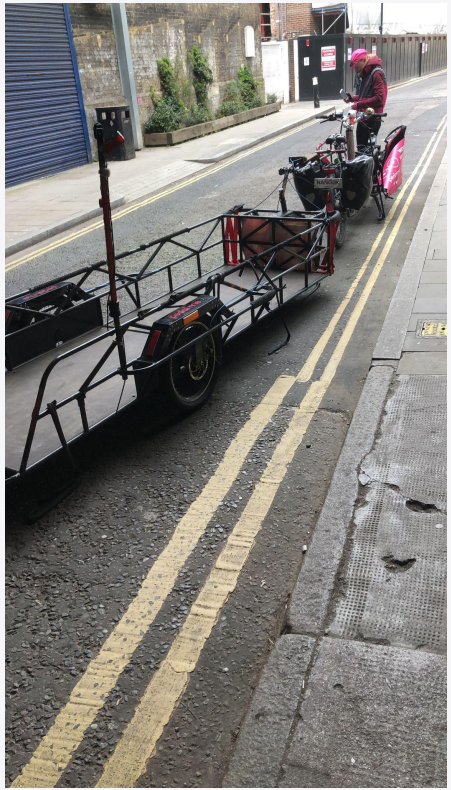
Vehicle Specific Route Calculations

Cargo bike -
12 km/hr



Trailer bike -
8 km/hr

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Thank You

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