



JUNCTION X SEOUL 2021



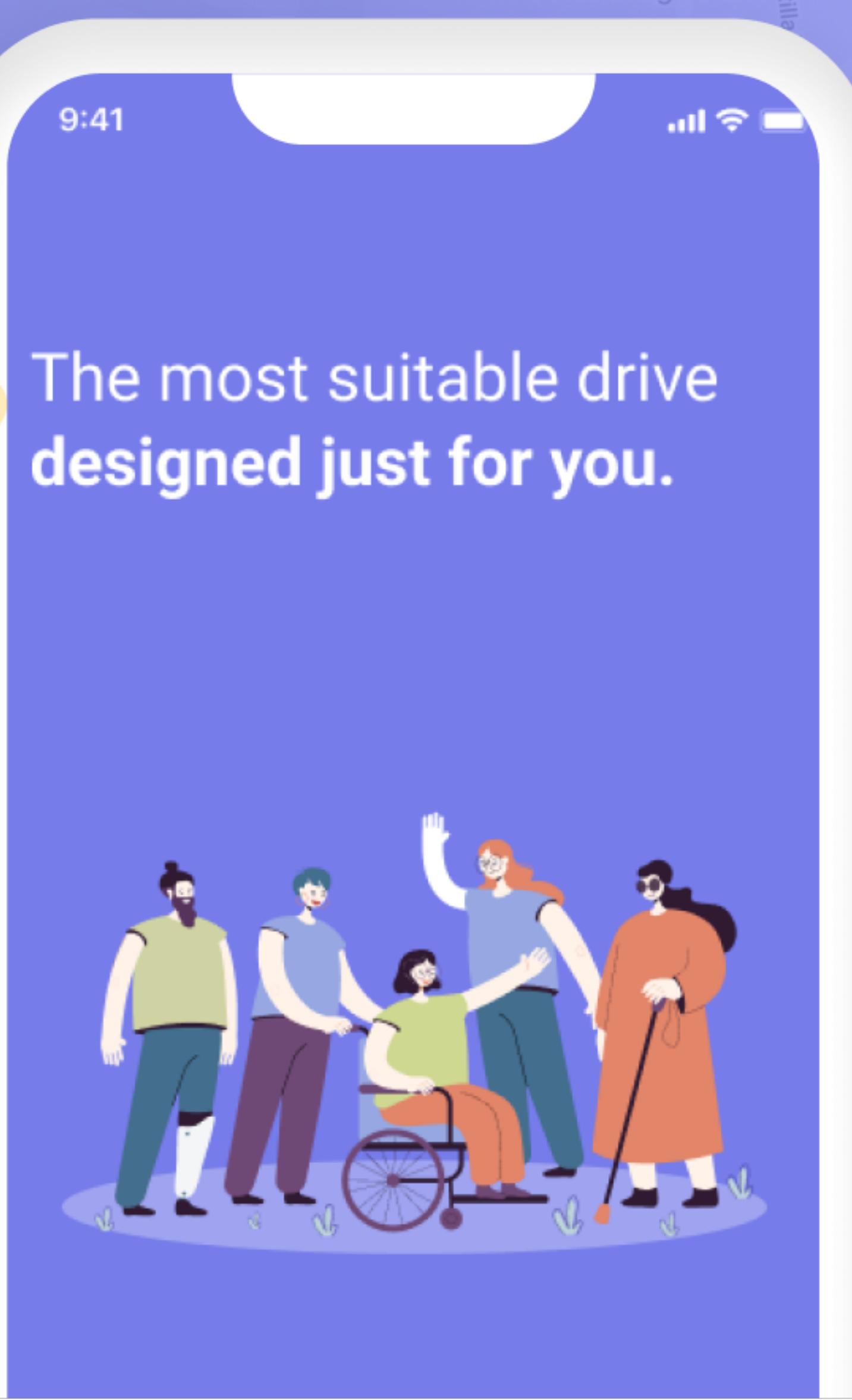
# Calmmuter

The Most Suitable Drive Designed Just for You.



## AUTOCRYPT

TEAM CAFFEINE ☕



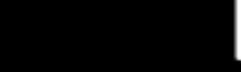


JUNCTION X SEOUL 2021



# Overview

이동의 편의, & 믿을 수 있는 서비스 제공



**Calmmuter**

Match the best driver  
with a driving habit  
just right for you

**Riders with  
difficulties**

신체 정보 & 희망 운전 습관 입력

신체 정보 기반 맞춤형 매칭

드라이버 등록, 주행 데이터 제공

FMS 분석 데이터 & 탑승자 매칭

**Drivers  
who wish to  
help the  
vulnerables**

TEAM CAFFEINE ☕

# Team Caffeine.

Jeongan Yang



Dongbin Kim



Seungho Baek



Ganghyeon Seo



Hyeonseo Kim



Yeonhyuk Kim



# Background



**When we take a taxi, we open its door as if we're spinning a roulette. Because we never know what kind of driving style or driving habits the taxi driver might have, and we have no chance to pick the right driver for us.**

# Our Target

Well, most riders prioritize saving time. So the driver's driving habits might not be their number one priority. Then, how about '**vulnerable commuters(교통약자)**' who have physical, psychological, and socio-economic disabilities? They are more likely to feel uncomfortable from **not knowing about their driver's driving habits in advance.**

The driver's driving habit  
**MATTERS** to us!



We prefer getting to our destination safely and calmly even it takes more time to be matched with the right driver.

**Vulnerable Commuters =**  
People with health conditions that can affect their riding experiences

# Personas

We defined those vulnerable commuters as our target users and focused on their pain-points.

We found **various types of disabilities** that can affect riding experiences.

Each disability **requires different driving habits** of their taxi drivers.



## Sarah

I am [pregnant](#) and my priority is to meet a driver who drives SAFE.  
I don't care about how fast I get to the destination.



## Hyeonseo

I was born with a sensitive [ear problem](#).  
When I take taxies, I typically suffer from motion sickness.



## Kanghyeon

I have [disabled arms](#). So, when a car makes a sudden stop, I can't fix my body and more likely to crash my head to the front seat.

**Needs for a specific driving habits suitable for them**

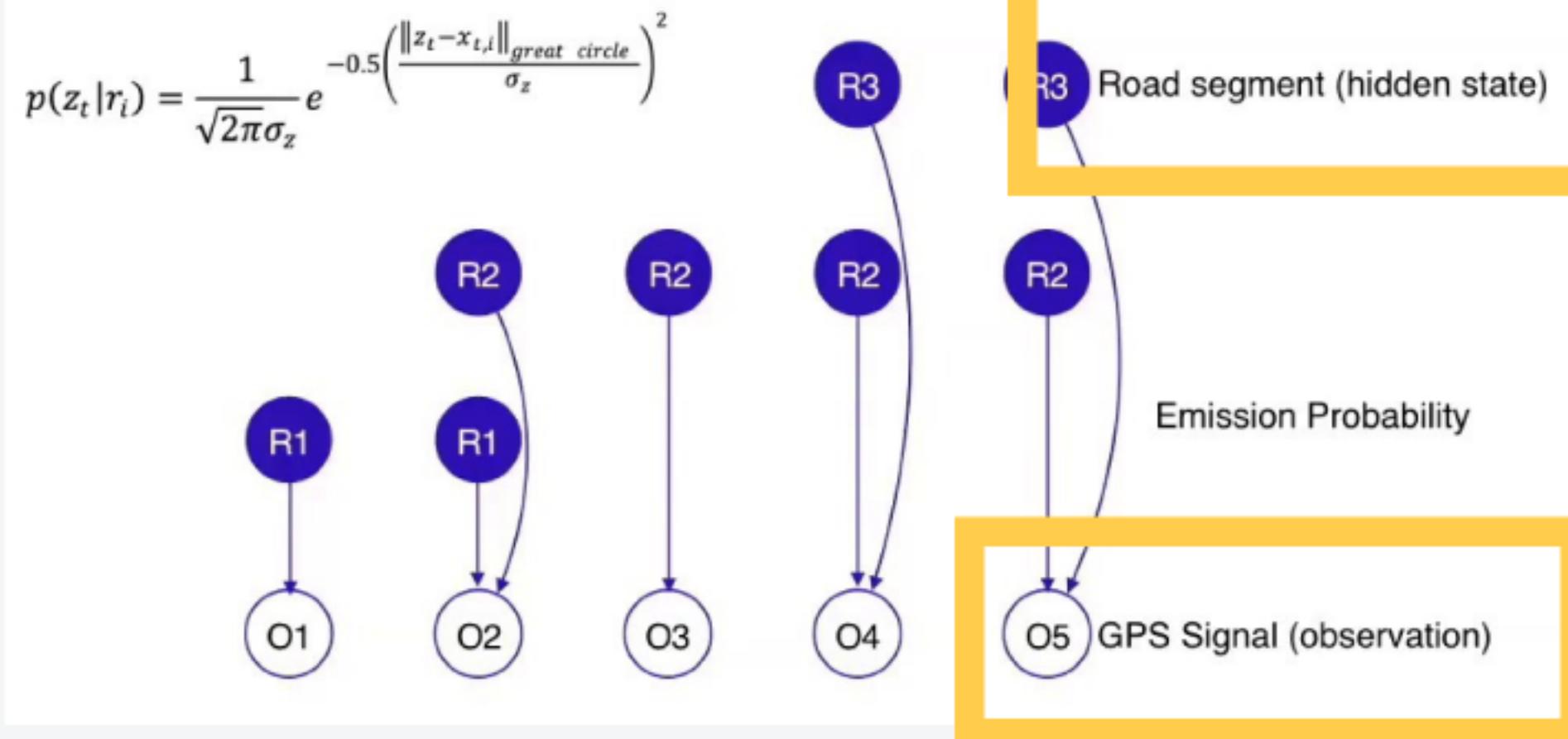
# Market Research

Currently, most taxi reservation mobile services only concerns the speed. Therefore, they match their riders with drivers solely based on the distance.

**Current map based matching can save riders some time, but it is definitely not for the vulnerable riders.**



Map Matching + HMM: Emission Probability



# Our Solution

So, we decided to use the driver's driving habits data to recommends the most appropriate driver for each rider, rather than matching the driver closest driver.



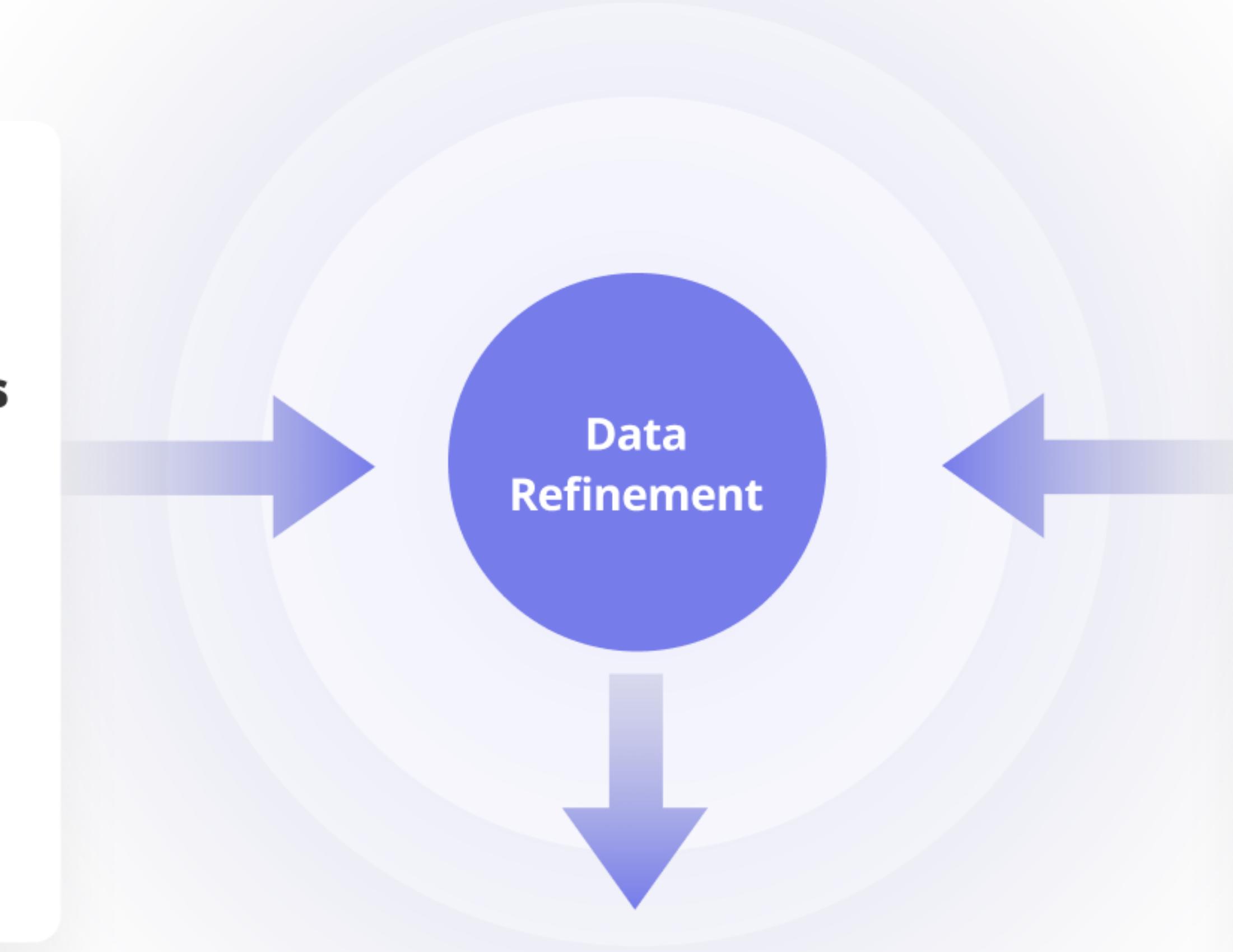
# Our Solution

So, we decided to use the driver's driving habits data to recommends the most appropriate driver for each rider, rather than matching the driver closest driver.



## Rider's health conditions

- Motion Sickness
- Mental Illness
- Disabled Arms
- Disabled Legs
- Pregnancy
- Ear Problems
- Patient
- With Baby



## Driver's driving habits

- Sudden acceleration occurrences
- Sharp turn occurrences
- Fluctuating speed occurrences
- Observance of distance between cars
- Etc

## Driver's car information

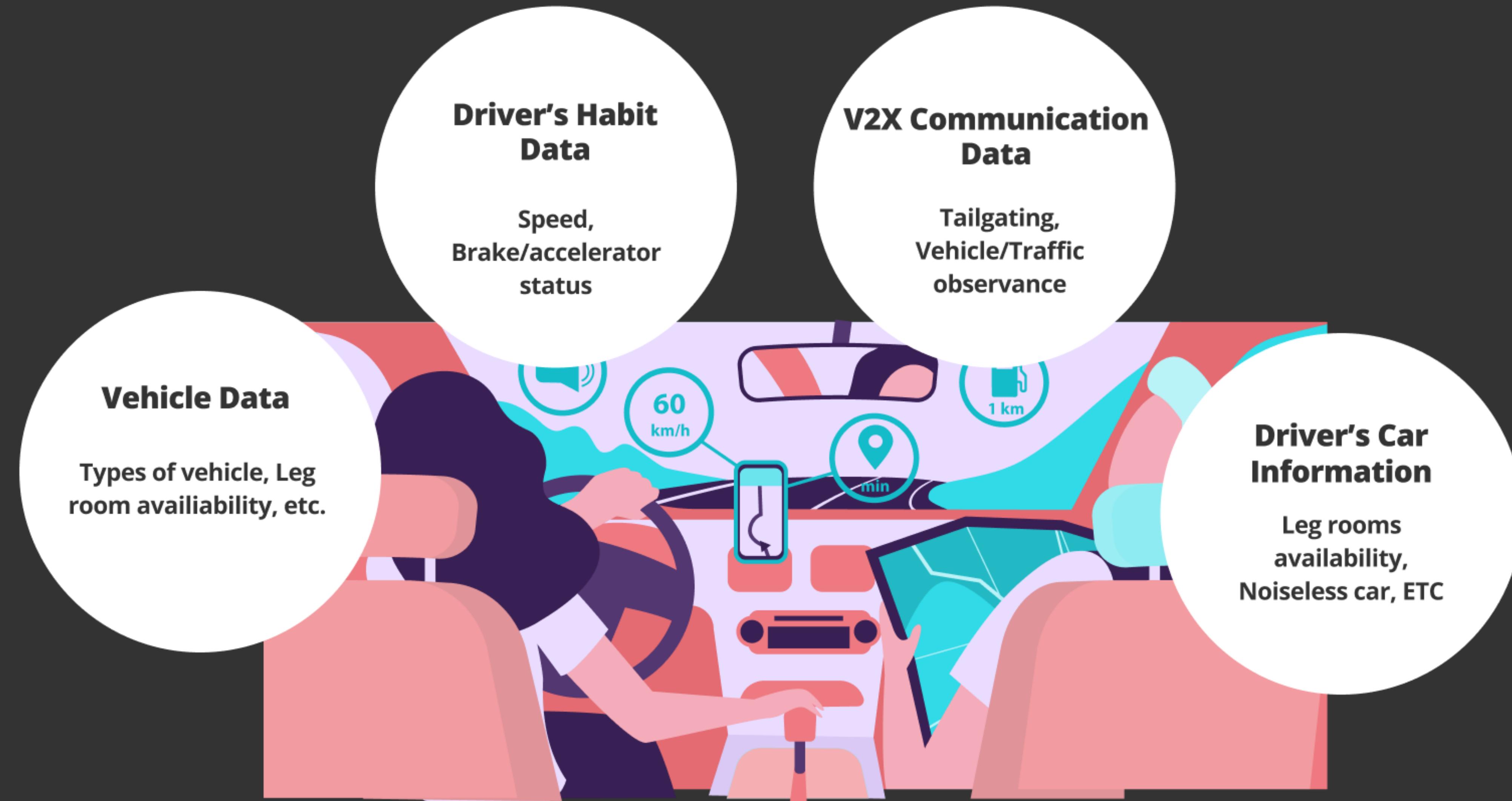
- Leg rooms availability
- Noiseless car

Match a driver with the most suitable driving habits  
for each user's health condition.

# Driver's Data

from AUTOCRYPT

The driver's diverse habit data can be collected by Autocrypt.  
It will be mined, analyzed and used to match the right rider for this driver's driving style.



# Matching Algorithms (Examples)



**Motion Sickness**



**Theme** Calm Ride

**Fluctuating Speed** -15% than average

**Sharp Turns** -22% than Avg.



**Pregnancy**

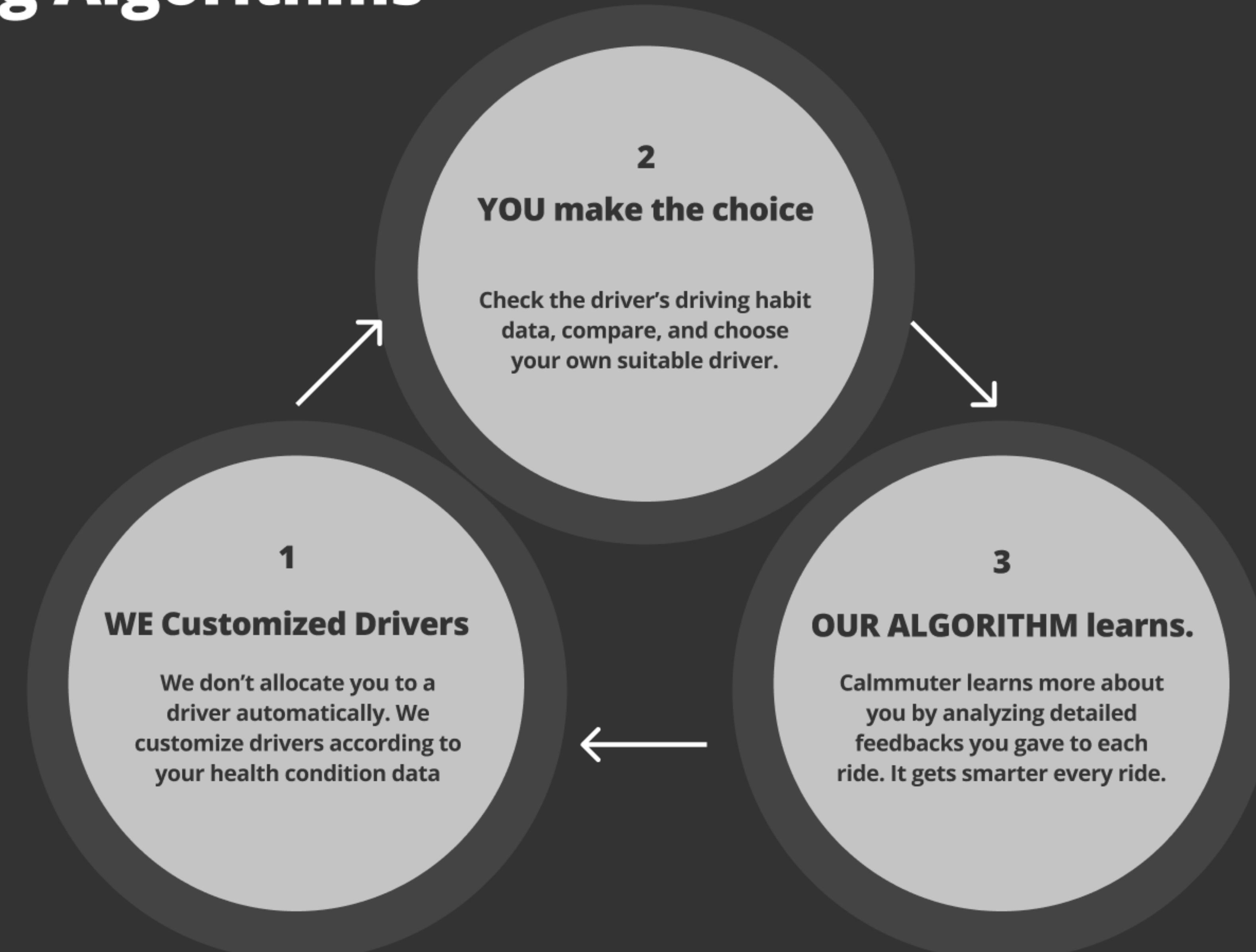


**Theme** Safe Ride

**Avg. Speed** Less than 20km/ph

**Distance Between Cars** +12% than Avg.

# Matching Algorithms



# Service Branding



## Calmmuter

The Most Suitable Drive Designed Just for You.

The name Calmmuter is a combination of a word 'Calm' and 'Commuter'. If you have a health condition or just simply looking for more peaceful start to your morning, this service is just for you.

It's not the fastest drive, but it will be the most comfortable drive.

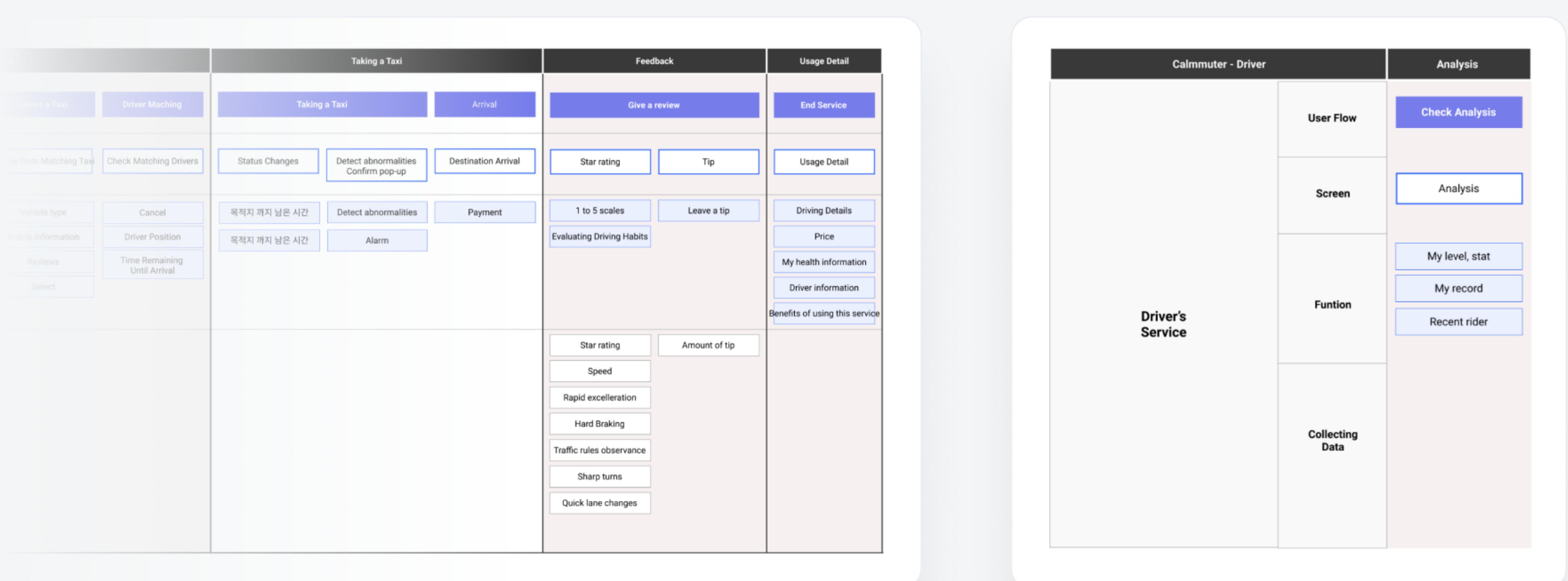
# Brainstorming



# Service Blueprint

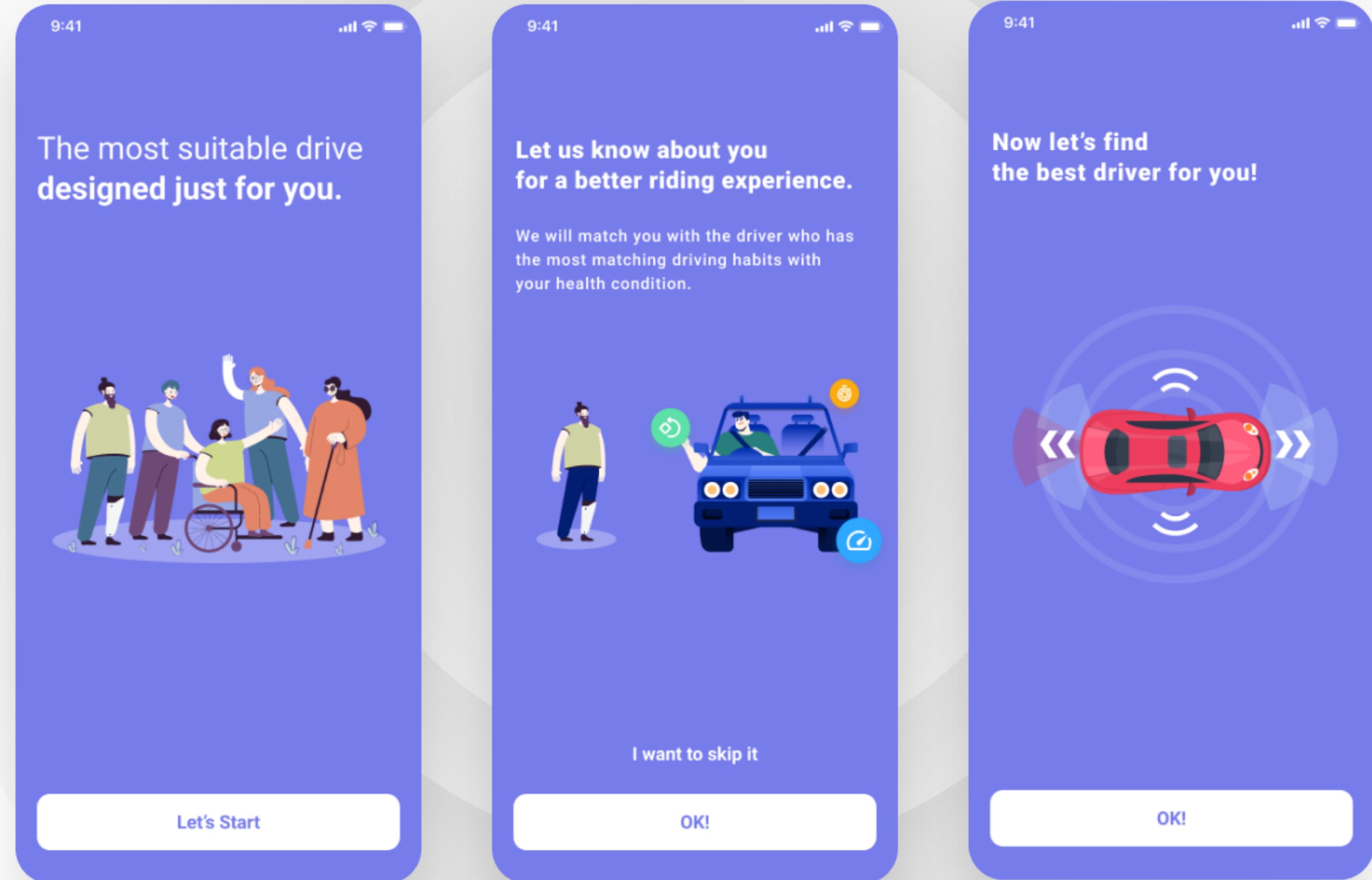
## Rider's service

# Service Blueprint



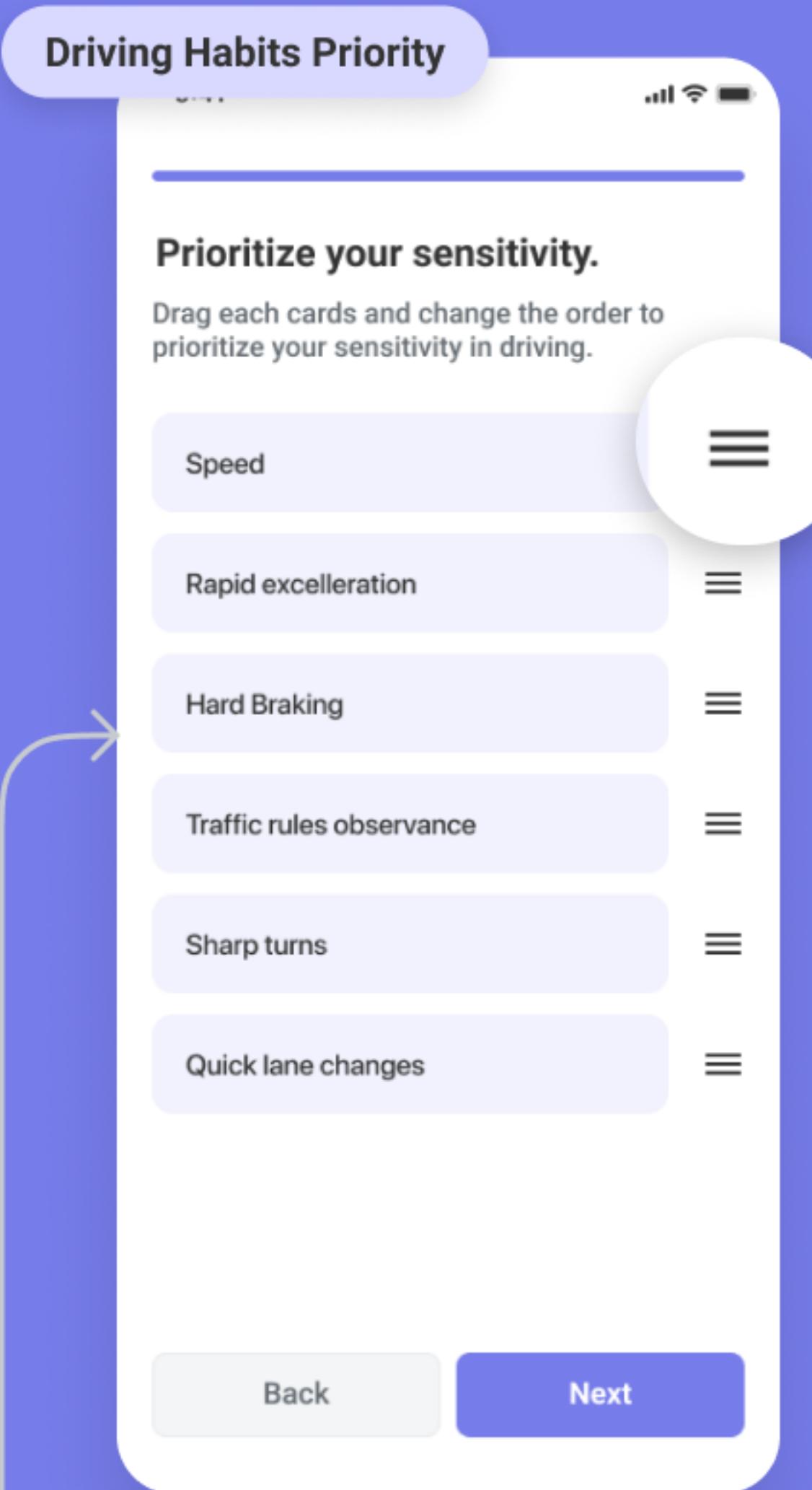
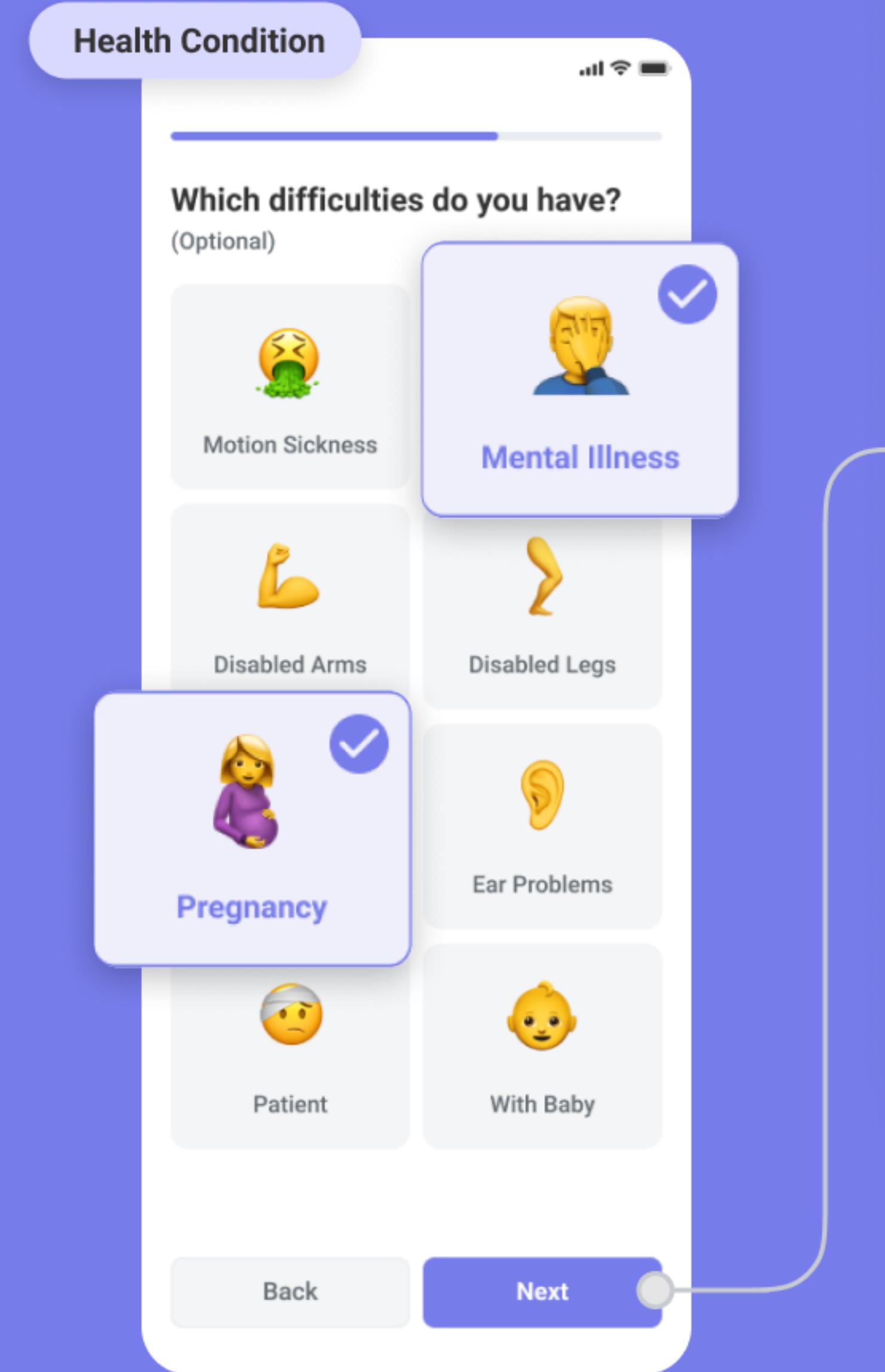
# Onboarding

**Onboarding informs users  
concept of Calmmuter**

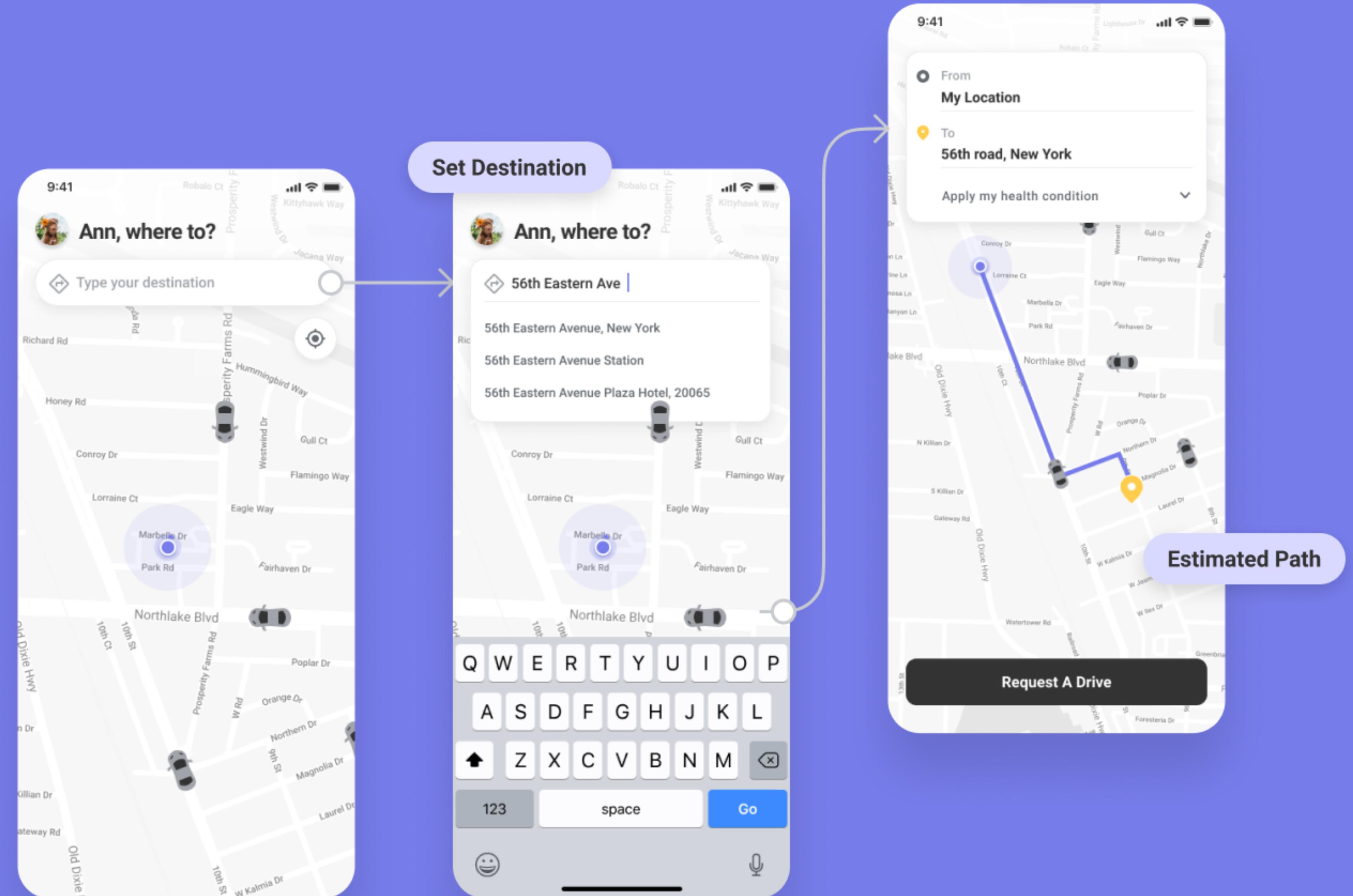


# Enter Personal Condition

Riders can enter their health conditions and prioritize them.  
Entered data will be used for rider-driver matching.

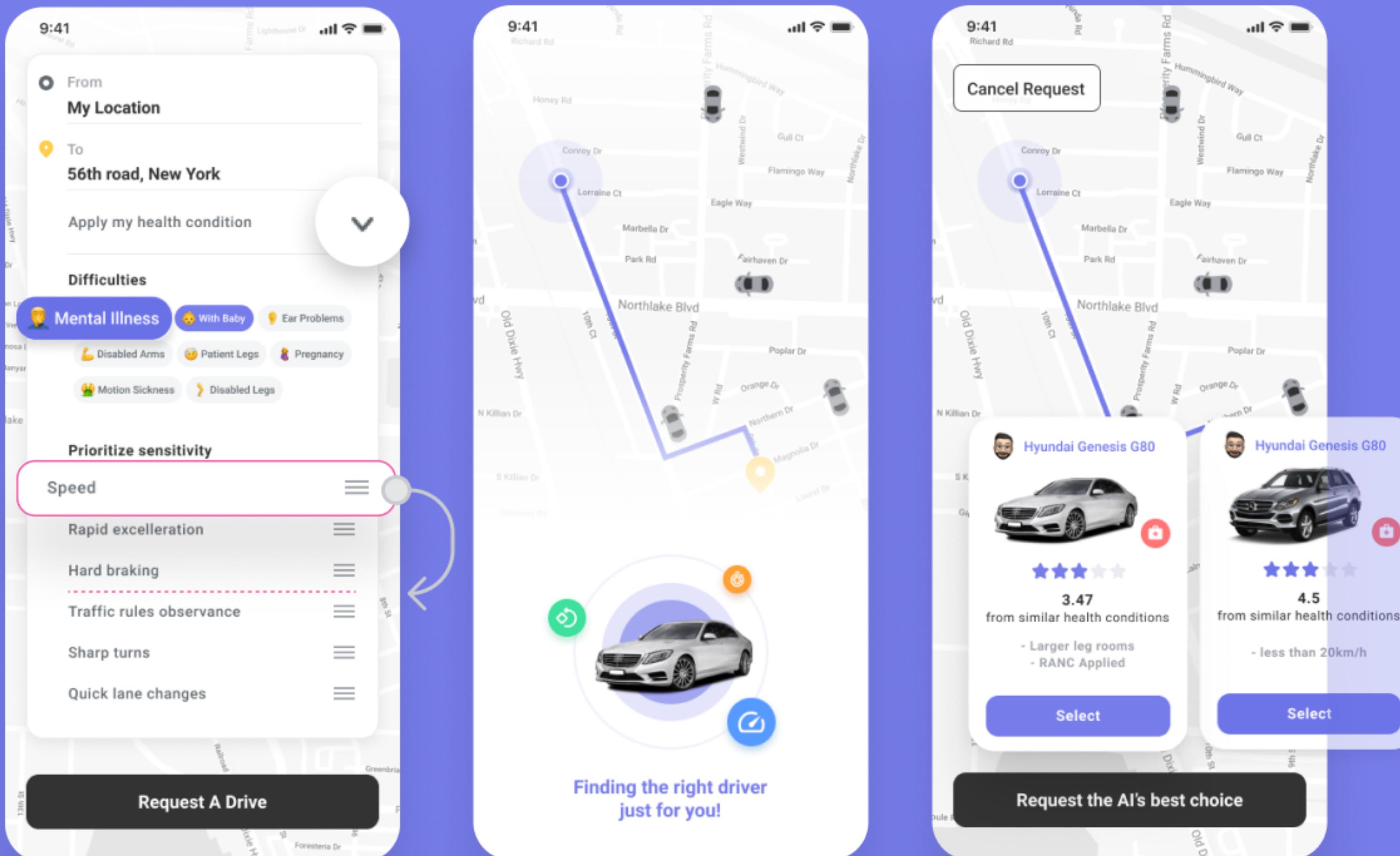


# Set Destination



# Filter & Choose Your Driver

When you call a driver, a list of nearby drivers that match their health conditions appears. Users can modify their medical filters once again

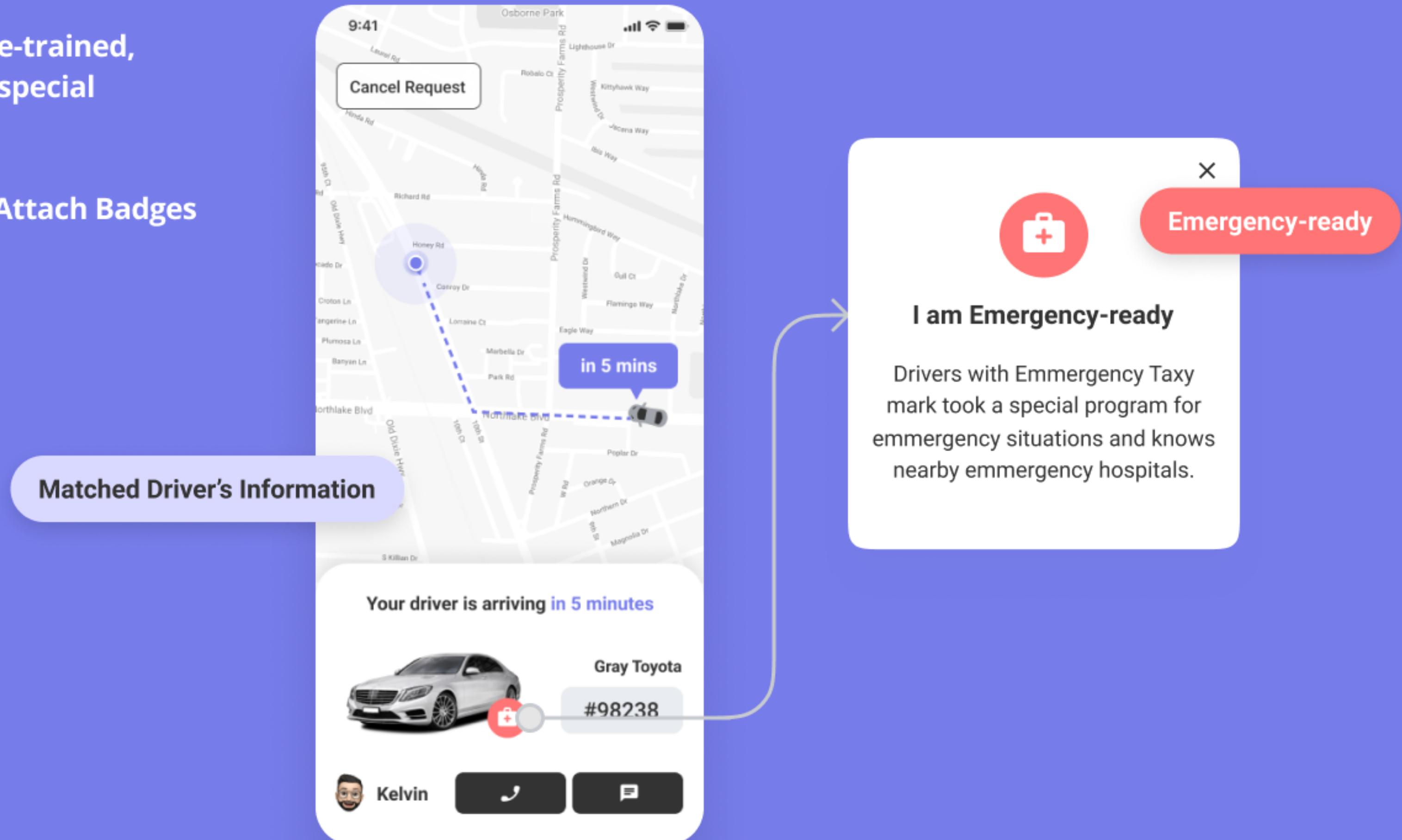


# Meet Your Driver

## Matching authorized drivers

Calmmuter's driver with is a pre-trained, certified driver considering the special circumstances of the rider.

## Emergency Pre-trained Drivers Attach Badges



# Finish Your Ride

## Calmmuter learns from your feedback

Your rating is used to increase the performance of matching model. Calmmuter's matching model utilizes data to determine whether each driver is suitable for you. If your rating and the model's rating do not match, we view this case as a red flag and use it to improve performance after analyzing it.

After the end of each ride, your preference of the driving experience will be used for personalized learning.

Star Rating

David Williamson

How was your ride in regards to your health conditions?

★ ★ ★ ★ ☆

Good

Tell us more about the ride

Next

Evaluating Driving Habits

Tell us more about the ride.

How did you feel about each categories in regards to your health condition?

Speed	No	Yes
Rapid excelleration	No	Yes
Hard braking	No	Yes
Traffic rules	No	Yes
Sharp turns	No	Yes
Quick lane changes	No	Yes

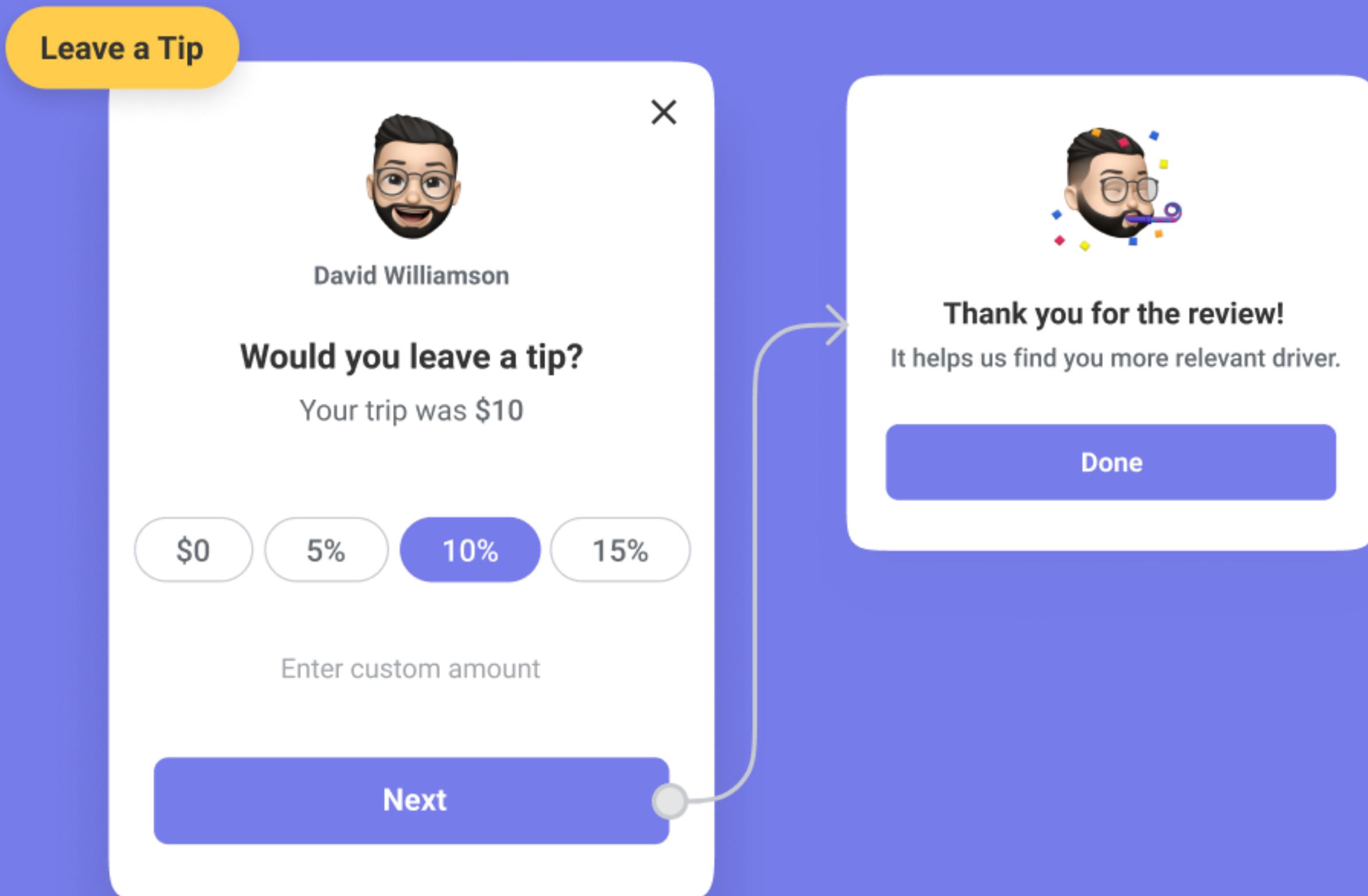
Cancel

Okay

- Enhance performance of matching model
- Personalized learning

# Reward Your Driver

If you are satisfied with the driver's special ride, you can give the driver a tip!



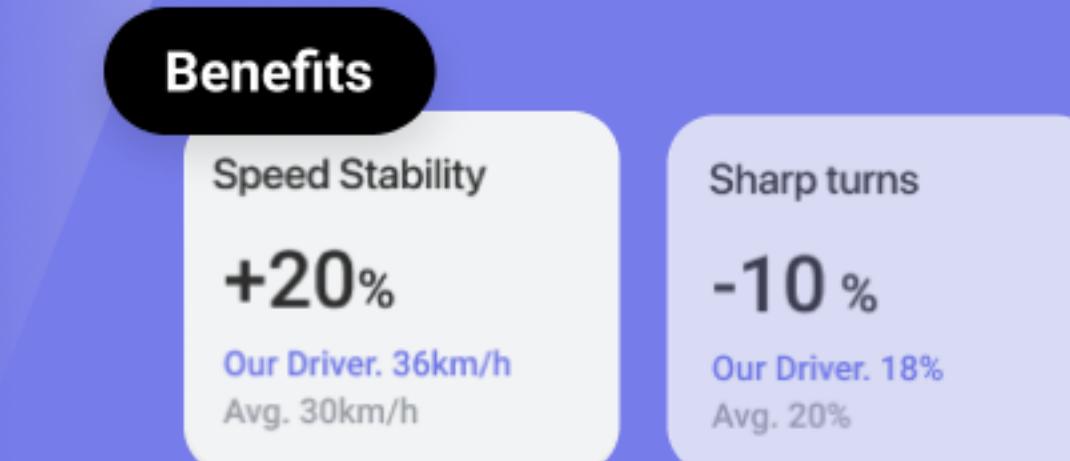
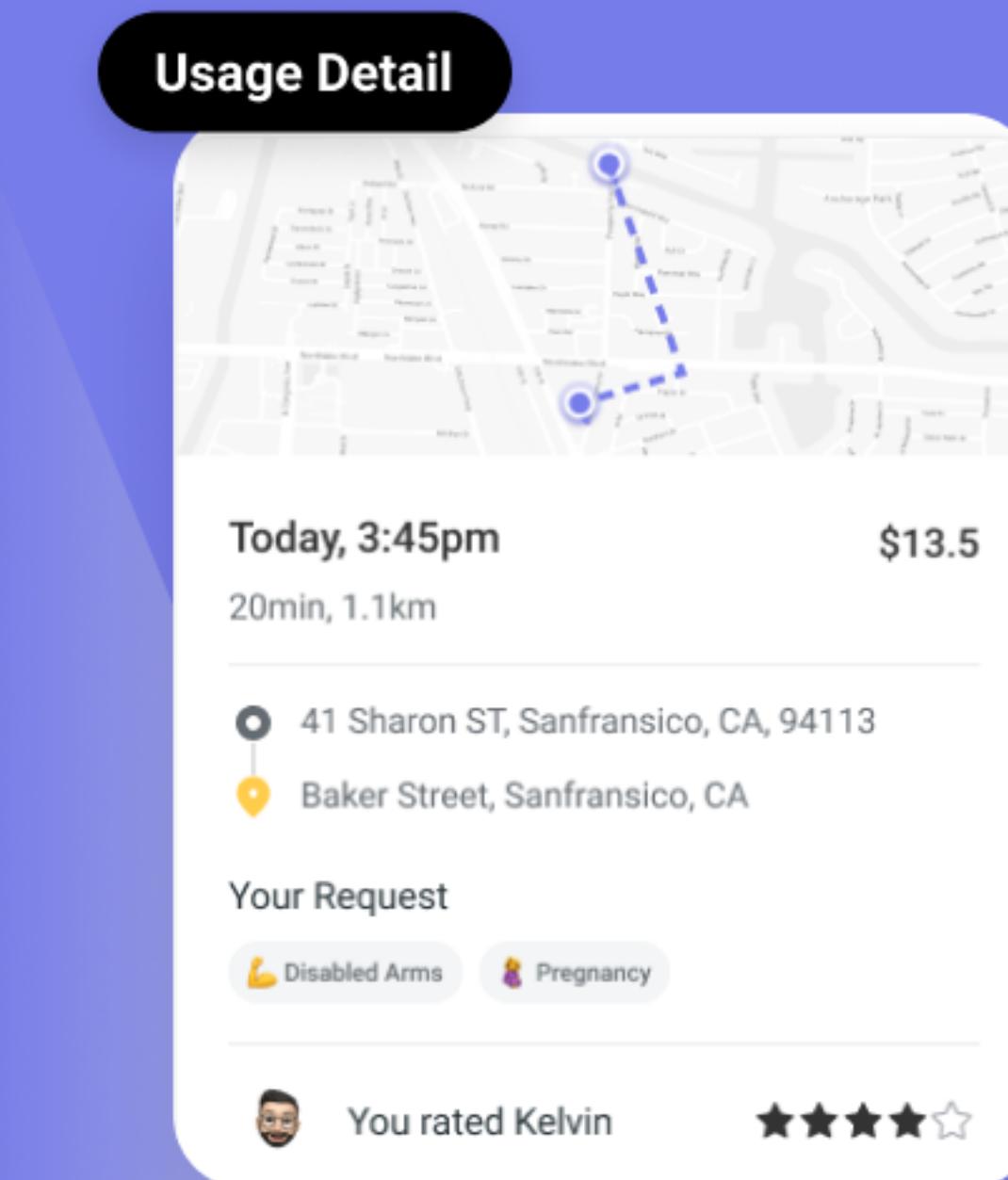
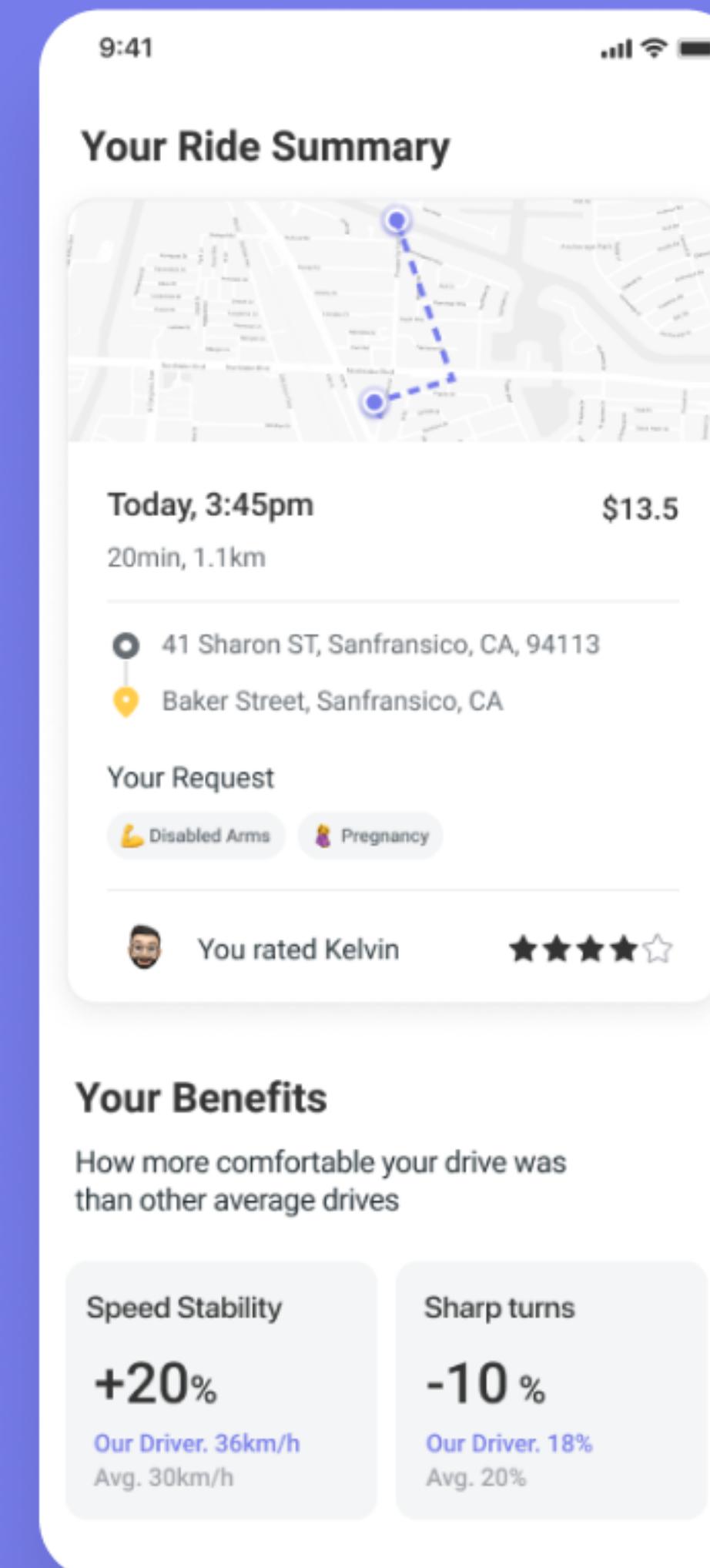
# Ride Summary

## Summary after end of trip

Time, distance, departure, destination, and other trip information such as filtering option, driver's profile.

## Riding benefits

Inform riders how much benefit they get by using data from Autoscript FMS such as acceleration, braking, etc. compared to the average figures of other riding experiences.



# Driver's App

## Driver's Dashboard

Real time management and Data Analysis

- **Rewards** level of comfort driving, badges.
- **Feedback** analysis from riders
- **Drivers specialty** shows what types of riders fits the driver most

### Driver's Data Analysis

The interface shows a driver profile for Kelvin Carson at level 3, Super Driver, with 80/100 exp. A blue progress bar indicates 80% completion. A purple box highlights a 'Level Reward' of 25% increased chance of matches. Below this, a 'My Ratings' section shows a 4.2/5 rating with five blue stars. Two cards below show average ratings: #1 Physical condition (Pregnancy) at 4.8 avg. and #1 Driving Habit (Lane Changes) at 4.8 avg. At the bottom, there are 'Statistics' and 'Show detail' buttons.

9:41

Driver's App Kelvin Carson

Lv.3 Super Driver 80/100 exp

Level Reward 25% increased chance of matches

### My Ratings

4.2/5

★★★★★

#1 Physical condition  
Pregnancy  
4.8 avg.

#1 Driving Habit  
Lane Changes  
4.8 avg.

Statistics Show detail

### Driver's level, stat

The interface shows a driver profile for Kelvin Carson at level 3, Super Driver, with 80/100 exp. A blue progress bar indicates 80% completion. A purple box highlights a 'Level Reward' of 25% increased chance of matches. Below this, a 'My Ratings' section shows a 4.2/5 rating with five blue stars. Two cards below show average ratings: #1 Physical condition (Pregnancy) at 4.8 avg. and #1 Driving Habit (Lane Changes) at 4.8 avg. At the bottom, there are 'Statistics' and 'Show detail' buttons.

Driver's App Kelvin Carson

Lv.3 Super Driver 80/100 exp

Level Reward 25% increased chance of matches

### My Ratings

4.2/5

★★★★★

### Analysis

#1 Physical condition  
Pregnancy  
4.8 avg.

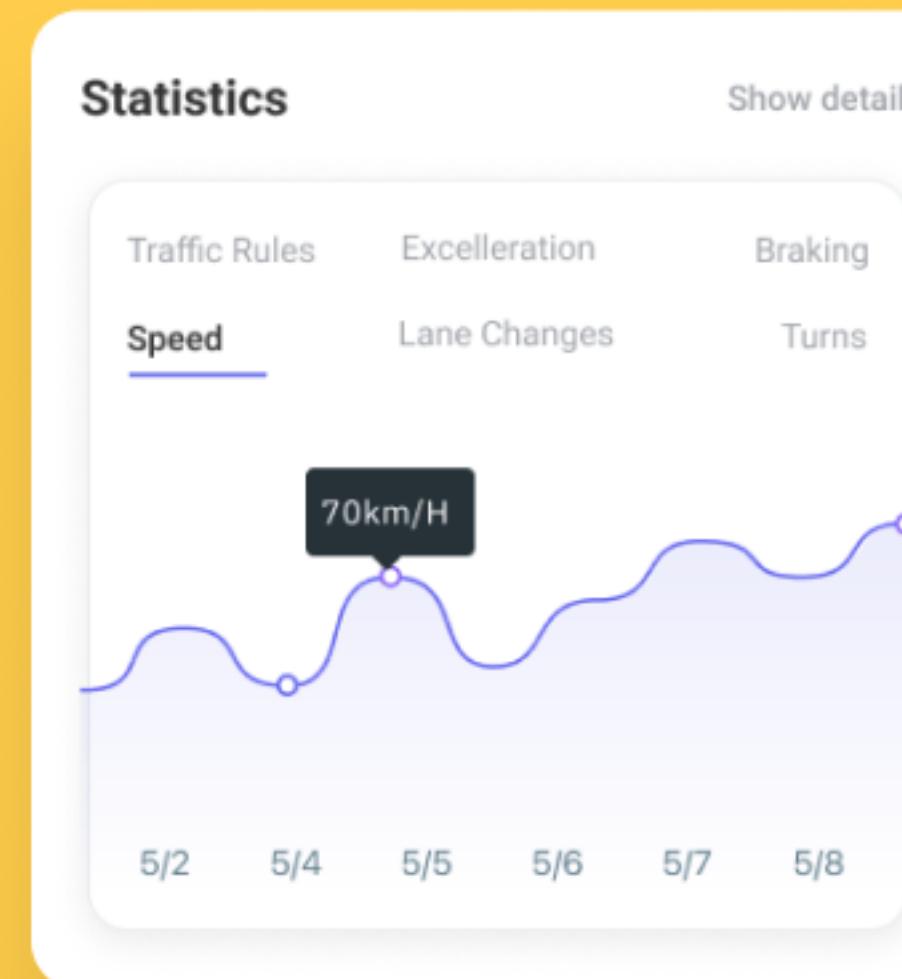
#1 Driving Habit  
Lane Changes  
4.8 avg.

# Driver's App

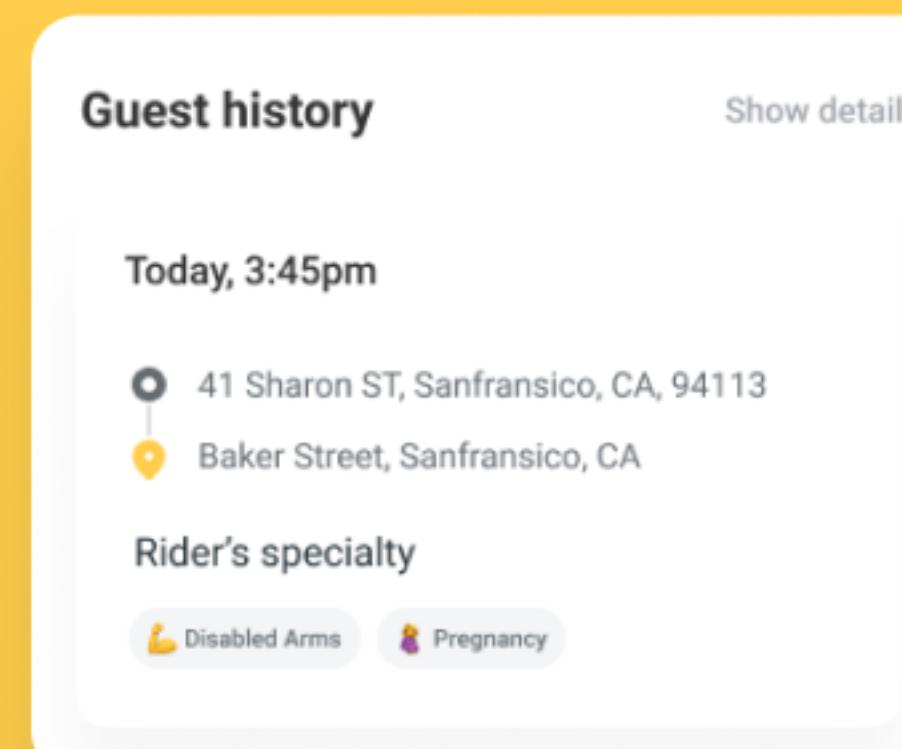
## Analysis of driving data, Rider history

- Display the aggregated data (Traffic rules, Excelleration, Braking, Speed, Lane Changes, Turns) compared to the average figures of others.
- Check rider history and their requests

### Statistics of FMS Data



### Rider History



Statistics

Show detail

Traffic Rules

Excelleration

Braking

Speed

Lane Changes

Turns



### Guest history

Show detail

Today, 3:45pm

41 Sharon ST, Sanfransico, CA, 94113

Baker Street, Sanfransico, CA

Rider's specialty

Disabled Arms    Pregnancy

Driver's Data Analysis??

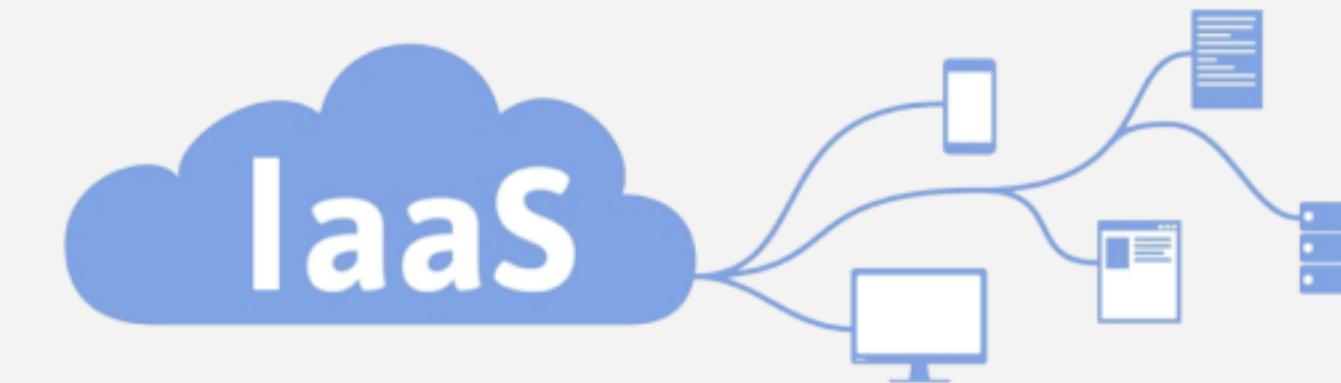
# Business Model

## SaaS: In-house



Raise funds by developing app in-house. Subscription pricing-model might be considered as the service is specialized for vulnerable riders.

## IaaS (Infra as a Service)



Raise funds by serving infrastructure to existing platforms such as Kakao Mobility, Uber, etc.

# Social Impacts

For Vulnerable Commuters (교통약자)

As-is



**There was no way to compare drivers' driving habits**

Regardless of whether you're sensitive about quick lane changes, or pregnant, or mentally ill, there is no way you can know about the driver's driving style in advance.

To-be

Health Condition



교통약자를 위한 전에없던 디자인

**Calmmuter cares about your vulnerability and how to improve your riding experience**

Now, the taxi business will offer more options for those vulnerable commuters. The market now knows that it is important to gather and mine their drivers' driving habits.

# Social Impacts

## New Business Paradigm

As-is

I have to move short distance by taxi and no one wants to ride me. I've been waiting for 20 mins.



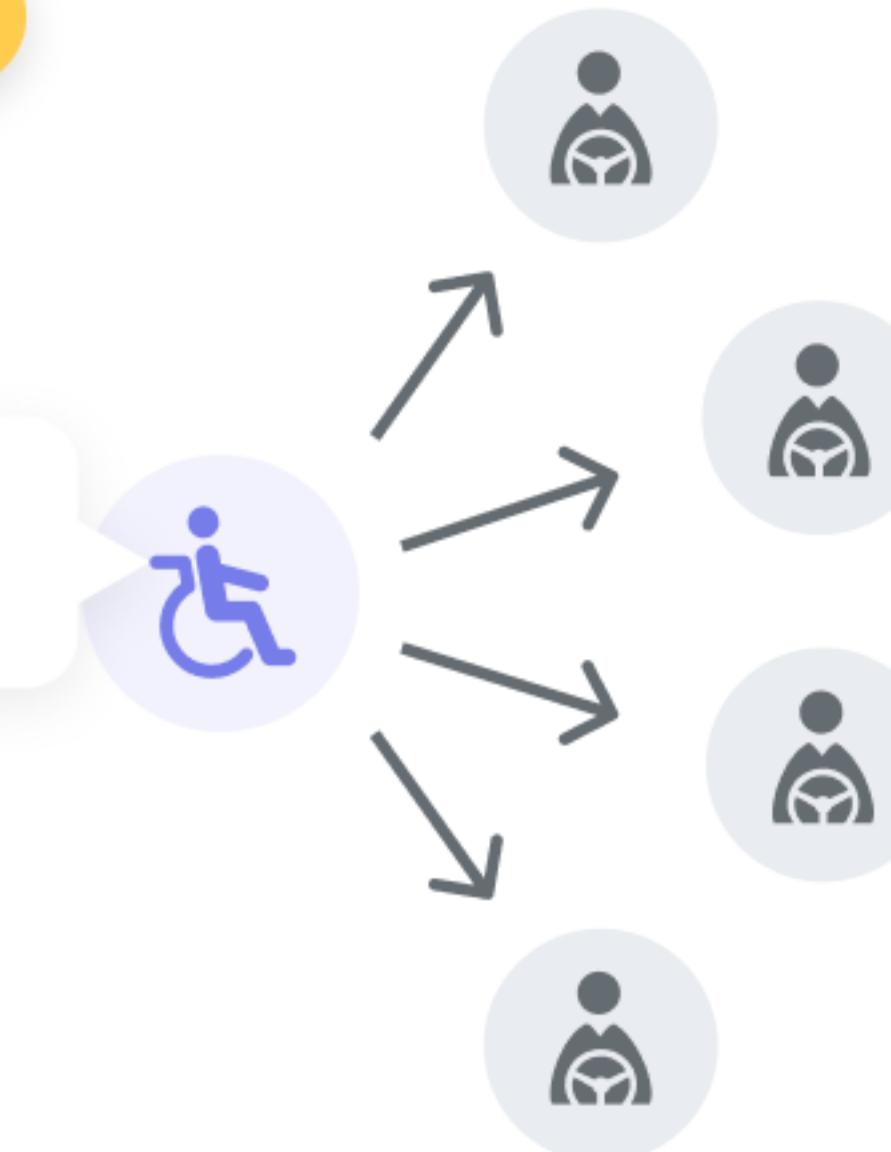
**Drivers choose their riders**

Before in the mobile taxi reservation&dispatching business,  
the choice to pick their riders was in the drivers' hands.

Whoever picks the customer quickly gets the match.

To-be

YE-HE!



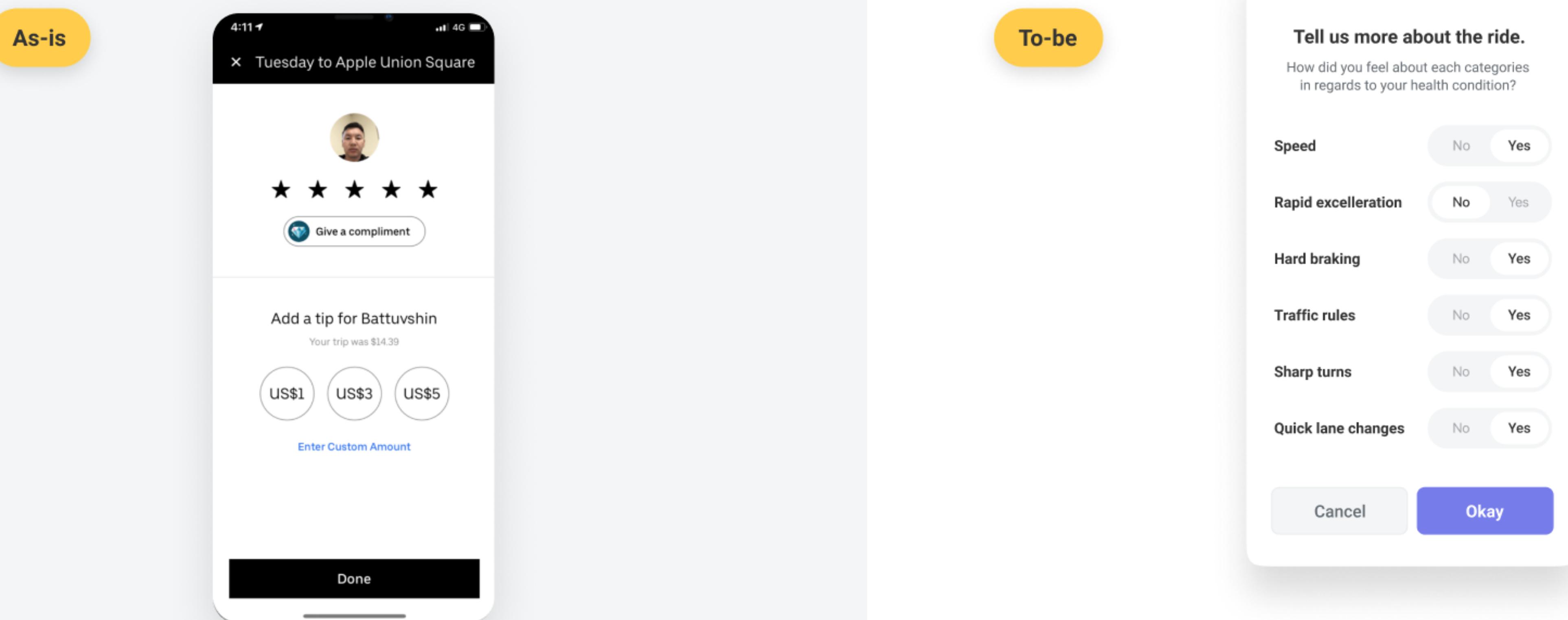
교통약자를 위한 전에없던 디자인

**Riders choose their drivers**

Now, the riders can see driver's data and have a choice to choose the right driver for their health condition.

# Social Impacts

## Cultivating more safe drivers



### Drivers don't care about their riders' ratings

Riders tend to give 5 stars without thinking too much, so the existing star ratings aren't reliable.

**Now your rating matters.  
And more drivers will drive safely to be picked by you.**

# **Check Our Live Demo!**

<https://drive.google.com/file/d/1B1rS3Jpialj29qpdmE7n62PJEaJoA7bf/view?usp=sharing>



The best riding experience designed just for you

