

## **CSP-588 User Centered Design**

### **Homework - 4**

#### **UX design for passengers in driverless ride-shares:**

##### **1.Specify passenger requirements in terms of:**

###### **a.Pain points**

###### ***Anxiety for being secure in a driverless vehicle:***

- Several passengers can experience anxiety when traveling in a car without a human driver. They might be concerned about how safely and accident-free the technology may travel and react to unexpected situations.
- Implementing strong safety measures, such as automatic braking systems, multiple sensors, and clear communication of safety protocols to comfort passengers about their well-being during the journey, is necessary to address this pain point.

###### ***Issues with the ride's basic convenience and comfort:***

- Travelers may be concerned about the entire experience of the trip, including issues like convenience, comfort, and facilities offered while traveling.
- In order to solve this problem, every aspect of the car must be designed for optimal comfort, facilities like Wi-Fi, charging connections, and entertainment systems must be included, and the route must be optimized for ease and efficiency. Furthermore, providing facilities such as set up temperature and seating configurations might improve passengers' satisfaction level.

###### ***limited capacity to access for passengers with disabilities:***

- Accessing and using driverless ride-sharing services may provide difficulties for passengers with disabilities. These difficulties may include trouble getting in and out of the car, finding out the user interface, or interacting with the system.
- Including technologies like voice commands, audio-based interfaces, and wheelchair ramps in the design of the user experience can help make the service simpler and more accessible for all travelers.

###### **b.Objectives**

###### ***Make sure that the entire trip is safe and secure:***

- Being stressed passenger safety above everything else is the main goal of this purpose. Strong safety features including multiple sensor systems, automatic braking, and secure procedures must be installed in the car in order to reduce risks.

- Furthermore, safeguarding against security risks and ensuring the confidentiality of passenger data are crucial components of this goal.

***Develop faith and confidence in the technology:***

- For self-driving technology to be widely accepted, trust must be established. This goal entails presenting proof of successful testing and practical performance.
- Furthermore, comforting passengers and boosting their trust in the dependability of driverless ride-sharing services can be accomplished by providing them with the chance to become familiar with the technology .

***Reduce the user interface and reduce friction:***

- The objective here is to make the driverless ride-sharing service as easy and simple to use as possible for passengers. It entails creating interfaces for users that are straightforward, easy to use, and accessible.
- Additionally, you may optimize the user experience and guarantee hassle-free and smooth travel for customers by cutting down on wait times, minimizing disturbances during the trip.

**c.Emotional Impact**

***Safety aspects should to provide a sense of security and comfort:***

- Passengers are more likely to trust and appreciate their experience when they feel safe. Visible airbags, seat belts, and emergency buttons are a few examples of safety measures that can offer real comfort.
- To further increase a sense of security, it is also important to communicate clearly about the safety procedures and emergency procedures of the vehicle.

***Sense of control should be developed by user-friendly interfaces:***

- Passengers should feel confident interacting with the service because of user interfaces that are simple to use and easy to understand. Giving passengers the ability to adjust their travel with entertainment and temperature controls, for example, might help them feel more in charge of their experience.
- Having clear feedback systems in place, like notifications or progress indications, can also help one feel more in control.

***Creating an awareness of connection and social groups:***

- An environment that is more inviting and accepting can be produced by encouraging a sense of community among travelers. Passengers can connect and interact to have access to features like group activities, shared travel alternatives, and social networking within the app.
- Support of travelers to share their accounts and experiences may increase their sense of community and belonging even more.

## **2.Examine concerns:**

### **a.Safety**

#### ***Testing and Validation:***

Put in place redundant safety precautions, such as several sensors and emergency stop buttons. Make sure that the vehicle's safety features and emergency protocols are communicated clearly. Update and improve technology often to maintain the highest levels of safety.

#### ***Systems for tracking drivers:***

Install devices to keep an eye on the operation of autonomous technology in real time and take action if irregularities or failures are noticed. This could include automated systems with the ability to take over operation of the vehicle in an emergency or remote monitoring by human operators.

#### ***Emergency response procedures:***

Establish clear procedures for responding to emergencies, including how to communicate with other moving cars, emergency services, and passengers. Train employees and passengers alike on efficient emergency response techniques.

### **b.Reliability**

#### ***Redundant Testing:***

To reduce the possibility of faults, thoroughly test and validate the self-driving system. Set up procedures for the vehicles' ongoing maintenance and monitoring in real time. Use predictive analytics to predict and solve possible reliability problems before they occur.

#### ***Data-driven maintenance plans:***

Create maintenance plans that are optimally based on component duration, environmental factors, and vehicle usage patterns by using data analytics and predictive modeling. This guarantees the planned execution of maintenance tasks to prevent failures and optimize vehicle reliability.

#### ***Procedures for ongoing improvement:***

The organization should cultivate a culture of continuous improvement by utilizing input from users, operators, and service workers to pinpoint areas that require improvement and carry out incremental improvements to the system. To address dependability concerns and increase overall performance, this involves regular hardware upgrades, software updates, and process enhancements.

### **c.Ethical concerns regarding job displacement**

#### ***Support the people:***

Look into ways to educate displaced people and position them in similar industries. Promote laws that assist affected people in having an easy transition. Speak freely and positively with stakeholders to discuss moral issues and find solutions that benefit everyone.

#### ***Long-term planning and change:***

Invest in workforce planning events, scenario planning, and research and development to proactively anticipate and prepare for future labor market changes. This can assist in identifying new trends and areas for development as well as possible job displacement regions, enabling the implementation of proactive mitigation efforts.

#### ***Participating in educational actions:***

Investing in education and improving activities might give displaced workers the chance to get new credentials and abilities that are in high demand in developing areas. This could entail working with academic institutions or providing specific instruction for those who are affected.

### **3.Design a UX for the passenger to feel adequately aware and “in control”**

#### **a.Sketch information displays and user inputs in the car**

The objective of the UI models for driverless ride-sharing was to improve the passenger experience by giving the inside of the car's interfaces a clear and helpful look. Passenger concerns like comfort, safety, and trust are addressed by these interfaces. The drawings illustrate readable information displays with up-to-date routing data, safety features, and status updates on the vehicle. The technology additionally uses human inputs wisely, making it easy for passengers to interact with it. Focusing on illustrations for simple comprehension and minimizing distractions, the design prioritizes simplicity and clarity. For passengers to have a comfortable and enjoyable trip in a self-driving vehicle, the UI models generally aim to provide them a sense of control and safety.

The infotainment system Diagram expertly combines immersive media playback and easy navigation to provide accurate navigation and entertainment for you while you travel.

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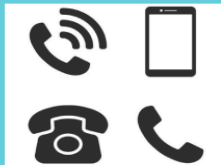
WELCOME  
SAILAVANYA

HOME

All Apps



Navigation



Phone



Settings

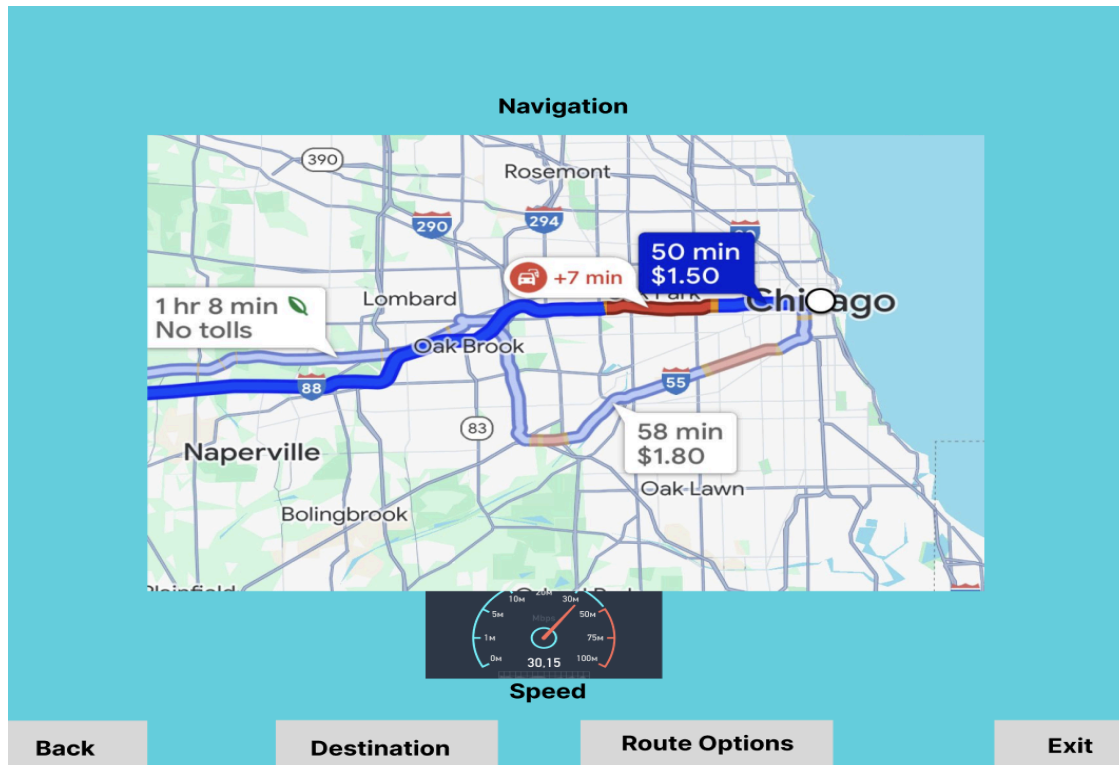


Bluetooth  
Audio



Music

Back



## **b. Describe the functions of an app for managing trips**

### **Functions of the Trip Management App:**

#### ***Booking a Ride:***

The pickup location, destination, and selected transportation options (such as vehicle type and passenger count) can all be specified by users. With the parameters you've chosen, the app estimates your fare and arrival time.

#### ***Selecting a Driverless Car:***

Customers can choose their ideal automobile from a selection of nearby driverless cars by considering several aspects such as price, type, and ratings. Every available car's real-time details, including its position and estimated time of arrival, are shown by the app.

#### ***Tracking travel:***

Users can utilize the app's map feature to track the real-time location of the driverless car once a journey has been scheduled. The app alerts users of any delays or modifications in the trip's status and gives them ETA updates.

#### ***Preferences & The customisation:***

For their rides, users may choose the temperature, seat arrangements, and music playlists they want. Each user's experience is customized by the app by remembering their previous selections.

***Billing and Payment:***

Mobile wallets, digital payment systems, credit/debit cards, and other payment methods can all be safely used by users to pay for their trips within the app. Users can check their payment history and comprehensive travel bills on the app.

***Feedback and Ratings:***

Users may rate their ride and offer comments on a number of different topics, including general satisfaction, cleanliness of the car, and driver behavior, after each trip. Feedback is utilized by the app to enhance the performance of driverless cars and the quality of services.

***Safety attributes:***

For further security, the app has real-time connection with support professionals and emergency assistance buttons in case of crises or unforeseen circumstances while traveling.

**Submitted by:**

Sailavanya Narthu

A20516764

[snarthu@hawk.iit.edu](mailto:snarthu@hawk.iit.edu)