

CHALLENGE

Problem

As ridesharing companies develop self-driving cars, level four autonomous vehicles will require human input in cases where it doesn't understand the complex environment.

This inherently leaves out people who are cognitively, visually, or physically disabled and unable to provide necessary feedback.



USER RESEARCH

Observation

We observed how different communities in PB and Downtown San Diego use ridesharing systems. A particular case caught our eye; how disabled communities use these services.

We noticed from our interviews and observations that some populations use these ridesharing services because of their disabilities.

User Quotes

"Uber has changed my life, to be able to be independent.... One denied me a ride because of the guide dog."
-Joy, Blind

"I like to be able to be independent enough to be able to get around on my own steam, and Uber is an affordable way to do that"
-Amy, Blind

"I mainly take Uber because of my condition"
-Emily, Cognitive Impairment

Insights

The disabled community benefits greatly from these ridesharing services. The sense of independence is important to these communities and allows them to feel empowered.

In an autonomous world, these users won't be able to participate as much as an able-bodied individual until level five autonomous vehicles are developed. We offer a system to bridge the gap until then.

PROTOTYPING

Wizard-of-Oz

We prototyped our solution to fuel our design process, testing our assumptions and providing data to improve our solution. Our simulation tested two experiences: the experience of the rider and the experience of the service provider.

Rider Experience

To test this, we had a driver pick up our participant. The participant was either blinded, drunk, or somehow disabled. The driver was shielded by a black tarp, so the rider couldn't see them and it felt like it was being driven autonomously.

The rider got to experience the various levels of system status we offer and how we offer it. We gained insight into how best to deliver information, and what information the user might need to know when they are in the car.

Service Provider Experience

In testing the service provider, we simulated how someone might act in a live situation. We used paper prototypes to emulate the UI and used the livestream from the car to emulate a real experience.

We learned what UI best supports their task and some key elements in designing their workspace to best support their task.

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