Responsibility-Sensitive Safety Human Machine Interface: How Passengers Will Feel Safe in AVs

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What is Responsibility Sensitive Safety (RSS)?

RSS formalizes human notions of safe driving, using a set of mathematical formulas and logical rules that are transparent and verifiable. These rules define the common-sense behaviors that humans characterize as leading to safe driving.

Why is RSS HMI important?

RSS formulas and rules are extremely important, but they are also invisible, and are sometimes difficult for “everyday” passengers to understand. The RSS HMI transforms these formulas and rules into a set of simple, clear, and intuitive interactions—so passengers can easily see how RSS is keeping them safe moment-to-moment during a ride.

Demo Description

The demo helps passengers understand what the AV is capable of doing, how it will react to possible dangerous situations, and why it does—or doesn’t—do something. There are four main elements of the HMI:

1. The simplified UI. The UI makes it easy for passengers to understand the most important info quickly and easily.
2. The RSS “safety zone”. A visible ring around the AV that shows the lateral and longitudinal safety zone that RSS maintains around the vehicle, moment-to-moment, throughout a ride.
3. Collision avoidance interactions & auto-playback feature. Simple interactions that show how RSS is proactively avoiding dangerous situations, and an auto-playback feature to help passengers understand why the AV may brake abruptly or make certain evasive maneuvers.
4. Safety feature icons & descriptions. Simple text and icons to help passengers understand the main ways that RSS is keeping them safe during a ride.