

Jaguar Land Rover has devised an augmented reality navigation system called Ghost Car that makes it easier for drivers to follow directions as compared to existing navigation systems.

## THE CONTEXT



Existing navigation systems use measurement units such as 'turn left after 100 metres' to instruct drivers. This requires drivers to estimate the distance they need to cover to perform a manoeuvre, which can be confusing. For instance, if there are two consecutive left exits, the driver may not know which one to take.

## THE INNOVATION



Ghost Car is an augmented reality navigation concept where the guidance visualisation is a 'Follow Me' Ghost Car that is presented to the driver through a heads-up display (HUD). Like any satellite navigation system, the Ghost Car provides navigational information and the driver is simply expected to follow the virtual car. The system also provides navigational cues such as the need to slow down or brake when approaching a junction. The Ghost Car navigation system reduces ambiguity, making it easier for a larger user demographic to follow directions. The project has also provided a set of specification guidelines for developing similar augmented reality navigation concepts.

## KEY CHALLENGES



**TO ENSURE THAT THE DRIVER CAN FOLLOW THE INSTRUCTIONS EVEN IF THE GHOST CAR MOVES OUT OF HIS FIELD OF VIEW BECAUSE OF THE HUD'S SMALL SIZE**

The team developed alternative graphics to provide guidance whenever the Ghost Car goes out of the user's field of view.

**TO OVERCOME THE PROBLEM OF OTHER VEHICLES OR OBSTRUCTIONS ON THE ROAD INTERSECTING WITH THE IMAGE OF THE GHOST CAR**

The team designed alternative/supplementary Human Machine Interface for affected scenarios to deal with this issue.



## POTENTIAL IMPACT



Jaguar Land Rover's proposed Ghost Car system eases the strain on the driver by presenting the navigation directions in a visual form. It is also configured to support safe driving as it guides the user to manoeuvre with less ambiguity. Moreover, the Ghost Car does not require the driver to use any measurement unit such as metre, kilometre or mile to perform a manoeuvre, which helps drivers when they are driving in a new country that follows a different metric system or set of traffic rules.