

## **A Holographic Infotainment System for Connected and Driverless Cars: An Exploratory Study of Gesture Based Interaction**

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**Abstract :** In this paper, an interactive in-car interface called HoloDash is presented. It is intended to provide information and infotainment in both autonomous vehicles and &#x201C;connected cars&#x201C;, vehicles equipped with Internet access via cellular services. The research focuses on the development of interactive avatars for this system and its gesture-based control system. This is a case study for the development of a possible human-centred means of presenting a connected or autonomous vehicle&#x201C;s On-Board Diagnostics through a projected &#x201C;holographic&#x201C; infotainment system. This system is termed a Holographic Human Vehicle Interface (HHIV), as it utilises a dashboard projection unit and gesture detection. The research also examines the suitability for gestures in an automotive environment, given that it might be used in both driver-controlled and driverless vehicles. Using Human Centred Design methods, questions were posed to test subjects and preferences discovered in terms of the gesture interface and the user experience for passengers within the vehicle. These affirm the benefits of this mode of visual communication for both connected and driverless cars.

**Keywords :** gesture, holographic interface, human-computer interaction, user-centered design

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