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(57) Abstract :
The present invention discloses a device (100) for generating and projecting holograms in real-time during virtual interaction sessions. The device (100) includes a camera (102) configured to capture real-time images and video recordings of users (112) during virtual interactions. A processing unit (104) to receive data and generate three-dimensional (3D) holograms of users (112). The depth information captured by a camera (102) assists in generation of 3D holograms. A graphics processing unit (GPU) accelerates rendering process for efficient generation of holograms. The holograms are projected into physical space by a hologram projection unit (114), incorporating optical elements for diffraction and projection. The processing unit (104) integrates machine learning techniques trained to enhance generation of 3D holograms based on received data. The projected holograms are transmitted to computing devices (110) participating in virtual interaction through a communication module (108), enabling real-time interaction.

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