# Current Telepresence Systems

Thr, August 6 (Week 7.5)

#### The Ultimate Goals for AR and VR

AR: An AR application with a planet-scale mirror world. Wherever you go, you are connected to the spatial version of the Internet through a device that can do everything a person can do and of course what a computer can do.

VR: A metaverse that can achieve any level of realism that is demanded. It can be the matrix version of hyper-realism or a world that allows you to do anything, especially things that are social, that is impossible in the real world.

#### Applications Available and Closest to the Goals





#### VR: Low-Quality Metaverse

**AR:** Telepresence

# Telepresence

Marvin Minsky (1980)

You don a comfortable jacket lined with sensors and muscle-like motors. Each motion of your arm, hand, and fingers is reproduced at another place by mobile, mechanical hands. Light, dexterous, and strong, these hands have their own sensors through which you see and feel what is happening. Using this instrument, you can "work" in another room, in another city, in another country, or on another planet.

Telepresence robot vs. AR telepresence

## VPL Research (1990s)

DataSuit/DataGlove: virtual environment as another place





## **Telepresence Robot**

To an actual another place.





https://youtu.be/GTw7q3-Bn6M

#### Room2Room

Projecting people to each other's room. Captures by an RGBD camera for each.





https://youtu.be/206krhxpUGk

#### HoloBeam

Captures with an RGBD camera and sends it to a headset.





https://youtu.be/zuvXvGUZbFg

# Holoportation

#### Capture with multiple RGBD cameras and send it to a headset.







https://youtu.be/7d59O6cfaM0