

Reality, improved

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“Lawnmower Man” and “The Matrix” depicted computer-generated worlds in which people could completely immerse themselves.

In some respects this technology has become widespread: think of all those video-game consoles capable of depicting vivid, photorealistic environments, for example.

What is missing, however, is a convincing sense of immersion. Virtual reality (VR) doesn't feel like reality.

One way to address this is to use fancy peripherals—gloves, helmets and so forth—to make immersion in a virtual world seem more realistic. But there is another approach: that taken by VR's sibling, augmented reality (AR). Rather than trying to create an entirely simulated environment, AR starts with reality itself and then augments it. “In augmented reality you are overlaying digital information on top of the real world,” says Jyri Huopaniemi, director of the Nokia Research Centre in Tampere, Finland. Using a display, such as the screen of a mobile phone, you see a live view of the world around you—but with digital annotations, graphics and other information superimposed upon it.

The data can be as simple as the names of the mountains visible from a high peak, or the names of the buildings visible on a city skyline. At a historical site, AR could superimpose images showing how buildings used to look. On a busy street, AR could help you choose a restaurant: wave your phone around and read the reviews that pop up. In essence, AR provides a way to blend the wealth of data available online with the physical world—or, as Dr Huopaniemi puts it, to build a bridge between the real and the virtual.

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