5G can make digital humans look real and turn real people into holograms

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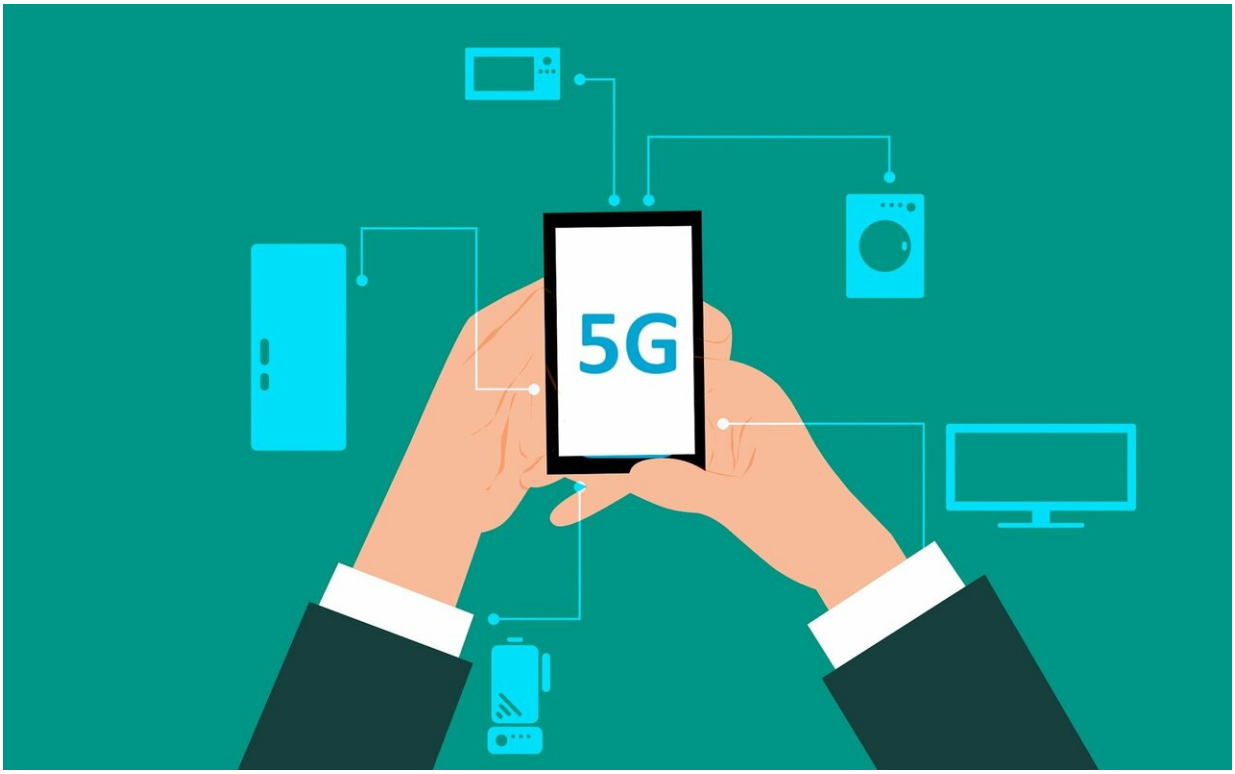

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Holograms. Emotive, life-like digital human beings. Washing machine repairs directed from miles away.

The rollout of 5G wireless networks that will continue throughout 2019

and beyond promises a slew of new smartphones that will hum along much faster than the models they'll eventually replace. But while zippier handsets compatible with the next generation of wireless are surely welcome, 5G's potential extends beyond them.

Verizon, and some of the entrepreneurial startups it is working with, recently demonstrated a few of the fresh consumer and business experiences made possible or enhanced by 5G, at its 5G Lab in New York City, one of five such labs around the country.

5G works in tandem with other technologies, notably artificial intelligence, augmented reality and enhanced computer vision, which as the name suggests, is the machine's ability to make sense of what it sees.

In each of the examples below, 5G promises to handle the big lift in processing data that digests a lot of bandwidth.

A very real but make-believe concierge

She is attractive, emotive—and all-too-real. But Lia is an emotionally intelligent "artificial human" from New Zealand startup Soul Machines, with expressions and slight skin imperfections that make it difficult to tell that she is digital.

Lia has a virtual brain, virtual nervous system and even digital versions of dopamine and oxytocin that affect her neurons and autonomously trigger facial muscles. She can make eye contact with you—you'll see your own reflection looking at her—and read your face, detecting your emotional state. If you smile, Lia will smile back.

The idea is that you will engage with Lia, or a digital person like her, to perhaps book a vacation to Paris, to find an ideal credit card, to handle technical support, or to interact in some other customer service fashion.

Lia is modeled after New Zealand actress Shushila Takao. Soul Machine can change the digital person's age, ethnicity and gender through digital DNA, based on real people. And though you could fool someone into thinking the person is real, Soul Machine customer Autodesk gave a digital character purple eyes to remind folks that she wasn't.

Soul Machine's other customers include Daimler and Royal Bank of Scotland. But fascinating as Lia is, you can't help but be wigged out by the prospect of not knowing if the person you are communicating with is human. And that is kind of creepy.

Real-time holograms

Evercoast is a computer vision and 3-D sensing software company that can exploit 5G to turn people in real-time into holograms. The goal is to shift the way people communicate from 2-D to 3-D. Along the way, you may experience new products, play games, and even interact with each other differently. Holographic telepresence promises to enable fresh shopping experiences, and impact corporate training, telemedicine and more.

At the Verizon lab, Evercoast set up a "volumetric" rig with two-dozen off-the-shelf depth-sensing cameras. The company's software rendered the 3-D hologram more or less in real-time.

Potential use cases: You might experience the dressing room of the future to try on clothes, send a stream to friends, and solicit feedback in real time. You might watch a 3-D newscast, communicate with your holographic bosses or "visit" your 3-D physician. You might even communicate this way someday with your grandparents as a holograms.

Such 3-D content might be displayed on a large TV monitors, a glass cube display, via a mobile phone or augmented reality headset.

Remote repairs

Your internet router or washing machine is on the fritz, but the repair expert can't come to the house anytime soon. A startup known as Streem can arrange a real-time virtual visit, accomplished through augmented reality and video.

The expert can collaborate with the person at home from afar, projecting virtual arrows and pointers to instruct someone on the steps he or she can take. The repair person can even take measurements remotely.

5G will let Streem stream higher quality video, certainly compared to 4G and in some cases even Wi-Fi.

Home inspectors are among the companies that might take advantage of Streem's technology, perhaps while consumers await approval on a mortgage loan. And Streem is working with appliance makers and telecom companies that might make use the technology to provide remote customer support.

Augmented shopping

Say you or a loved one has a food allergy. Sure, you can physically inspect each box of cereal or other food item you come across in the grocery store to see if it contains nuts or some other ingredient to avoid.

Verizon's own 5G developers propose a more hopeful solution, which uses augmented reality to blend online shopping with physical retail.

You point the camera on your phone or tablet at store shelves to see an instant readout on the screen of which boxes have which items have which ingredients. This can be done today in a limited fashion.

According to Verizon, though, 5G will let a retailer augment tens of thousands of products to identify ingredients or provide other data to consumers from product ratings or info on which items are in stock. Consumers might arrange a mobile checkout right then and there, and arrange to have items shipped home.

Such technologies will take time to implement, and there's no guarantee of wide consumer acceptance. Some of these have serious privacy implications, too, that bear watching. What they again demonstrate, though, is that 5G's potential, while just that, is enormous and not just about your phone.