Video

Video has changed a lot over my career. I distinctly remember going to a neighbor's house when I was a kid to check out a color TV. The 3D, virtual-reality, and live individual streams of the metaverse were inconceivable—until somebody conceived them. Video continues to be a catalytic force that sparks imagination and drives much of the thinking around the current technology landscape.

Leia - Light Field Display

Light field displays promise a near Holodeck-type 3D experience. A regular camera gives you a single perspective. All you see is exactly what the camera sees. A stereo (or 3D) camera gives you two perspectives—one for each eye. Light field technology gives you many perspectives. It does this by using many cameras (or simulated viewpoints) to let you choose your perspective (for example, by tracking your head position) while viewing the image. This enables realistic 3D viewing without using special glasses. Leia is developing light field displays that can render this light field content. Organizations like the Immersive Digital Experiences Alliance (IDEA) are working on ways to encode, transmit and display light field content so someday this 3D experience can be enjoyed by everyone. In the meantime, you'll just have to go to CES.

Seoul Viosys - MicroLED Panel

If you want a big TV (I mean *really big,* like in Cowboys Stadium), just glue a bunch of smaller TVs together. This is the idea behind microLED TVs. Seoul Viosys makes a panel that's like a TV display Lego block. Multiple blocks can be snapped together to make a display of arbitrary size. Seoul Viosys has a patented manufacture process (WICOP) that stacks the red, green and blue colors vertically and doesn't require wire bonding. This allows 2,000 color pixels per inch for amazing resolution. The current drawback is the price. While we don't have pricing for 2023, the 89-inch model from last year costs $80,000 US. This year Samsung is offering a 50-inch model that will hopefully be much less expensive.

Aromajoin – Smell-O-Vision

It seems Smell-O-Vision is revisited at CES about every third year. For 2023, Aromajoin is bringing smell to the video viewing experience. While conceptually compelling, it suffers from a couple of challenging problems. Unlike audio and video, it can't be a digitally transmitted, electronically generated medium. You need some sort of chemical cartridge consumable, and without primary components (i.e., red, green and blue in video), the number of scents you can generate is limited by the number of smells in your cartridge. The only scalable solution is a cranial interlock that simulates the electronic signal from your nose to your brain rather than the chemicals from the "Aroma Shooter" through the air to your nose. For now, you're limited to the aromas generated by your fellow moviegoers.

Samsung 8k Projector

Samsung's "The Premier" is an ultra-short throw (UST) projector with 8K resolution. That's four times as many pixels as a 4K TV which in turn is four times the resolution of a 1080P high-definition TV. The UST projector sits on a table a few inches from your wall and can project a picture up to 150 inches (diagonally) on any wall. You'll just have to make some compromises. A "wall" is generally a lousy surface for video projection, so you might want to buy a projection screen.

Also, the UST projector is going to have less contrast than a longer throw projector and much less contrast that a microLED, OLED or even backlit LCD TV. You'll have to draw the curtains. Atmos sound is from a built-in sound bar, but Atmos sound from a single speaker box, on a table, is different from Atmos sound though surround speakers with a dedicated subwoofer. If your priority is a big picture on your wall from an unassuming box on the table, this is a smart choice. If your priority is an amazing home theater experience, you can get a better system for less money.

ASUS – Eye-tracking 3D Laptop

Light field displays there are not only good for watching 3D content on a TV, they're also good for watching 3D content on a laptop. Building on the concept, the ASUS Vivobook Pro 3D OLED uses what ASUS calls Simulated Reality (SR). It's a combination of lenticular light-field, integrated sensors and image processing algorithms that combine to create a realistic 3D experience.

Displace - Suction Cup Wireless TV

While LG showed “wireless” TV’s that send signals from a separate box to the wall-mounted TV (that needs a power cord), Displace showed a “true” wireless TV that needs no power cord. It runs on four rechargeable batteries and sticks to the wall, window, or your pickup’s tailgate with two giant active motorized suction cups. All you do is press it against the flat surface and you’re good to go! It also features a built-in camera on top that pops up with a ball-point pen action. The camera can be used for video conferencing, but it’s also for gesture recognition to control the TV rather than a remote control. I’m not sure how many use cases require a true wireless TV, but they said it hardly took any time to set up their CES booth.

Brelyon - Cavity Graphics for 3D

Brelyon is an MIT spinoff that uses a glass-free 32” screen to simulate a 122” virtual screen 5 feet away. In other words, you get the experience of 3D surround video on a more modest-sized screen. It’s ideal for gaming or other immersive experiences.

Internet of Things

The Internet of Things (IoT) is becoming mainstream. Parks Associates reports that broadband customers have an average of 16 connected devices in their homes, up from 13 devices in 2021 (anecdotally, I’ve heard that some of those devices are still in their boxes). People are becoming more comfortable handing over some of their tasks to devices and software automation. Personally, I say “goodnight” when I go to bed and Alexa closes my blinds, turns off my lights, locks the doors and arms my security system. This delights me every time I do it. Most people don’t have as many smart devices, but the number is growing.