

Technologies to Consider

Artificial Intelligence

Here we use the term artificial intelligence (AI) to describe machines that mimic cognitive functions that intelligence (AI) to describe machines that mimic cognitive functions that humans associate with other human minds, such as learning and problem solving. Examples like Speech recognition, strategic gameplay (e.g., chess, Go), and autonomous vehicles.

Sensor Technology

Sensors can be as simple and ubiquitous as smoke detectors and elevator buttons or as complex as the light detection and ranging sensors used in some autonomous vehicles. Example within a healthcare context include glucose meters and heart rate monitors.

Data Transmission

Broadly speaking, data transmission is the transfer of data over a point-to-point (one-to-one) or point-to multipoint (one-to-many) communication channels and can take many forms. Some forms of data transmission that are used every day include WiFi, Bluetooth, and LTE (cellular data).

Cloud Computing

Cloud computing is the delivery of computing services (e.g., storage, software, analytics) over the internet. Innovations in software and hardware as well as improved access to high-speed internet have worked together to make cloud computing popular. As more companies rely on the cloud to store their data, security remains a top concern.

Naturalistic User Interfaces

A general guideline is that NUIs are accompanied by little to no learning curve for an individual to achieve proficiency in using the interface. Microsoft's Kinect sensor allowed users to interact with gaming consoles or PCs using mid-air gestures.

Wearable Technology

We use the term wearable technology to refer to a category of devices that can be worn unobtrusively on a person's body. This category may also include devices implanted within a person's body that include the ability to measure and record information related to health and fitness. Some examples include fitness trackers (like the Fitbit), smart watches (like the Apple Watch), and socks for detecting ulcerations (like Siren's smart socks).

Smart Home Systems

Smart home systems typically connect controlled devices to a central hub, which in turn allows users to control functions through a computer, tablet, controlled devices to a central and also allow users to schedule certain tasks within the home (e.g., turn lights on or off at a specific time). Examples of smart home systems include Google's Nest thermostat, Amazon's Ring doorbell, and Fibaro's flood sensor.

Robots

Broadly speaking, a robot is a machine that is capable of carrying out a complex series of movements. Some robots are designed with a screen to represent a head or 'face' to dynamically communicate with users, but this feature is not a necessity for the robots that we are thinking about. Some of the examples that we are thinking about include Jibo (though now discontinued), ElliQ, and Japan's AIST's Paro.

Virtual and Augmented Reality

Technically speaking, virtual reality (VR) describes an explorable, interactive, three-dimensional, computer-generated environment that a person perceives as being locally present and in which he or she is spatially, visually, and auditorily immersed. Examples of these devices are Oculus's Rift, HTC's Vive, and Sony's Playstation VR.

Augmented reality (AR) describes an interactive experience of a real-world environment that is enhanced by computer-generated perceptual information, possibly across multiple sensory modalities. Example is game Pokemon Go.

Virtual Assistants

We refer to products like Amazon's Alexa, Google Assistant, Apple's Siri, and Microsoft's Cortana as virtual assistants. These products are usually voice-controlled and have a wide range of functions. Virtual assistants can help users search the internet for information, control other connected devices, access and edit information from users' calendars and other sources, control music, run timers, send messages, order products online, and provide users with real-time spoken translations.

[Source: MIT AgeLab]