IoT Eye Tracking in Elderly Care

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Overview

Internet of Things

Internet of Things is a technological revolution that consists in connecting objects that we use everyday to a global network, the Internet. Internet of Thing's idea is to transform the digital and physical world in one, through devices that can communicate with each other.

Applications

- Connected Industry: "things" connected between themselves in the industry area , like printers, cranes or whole mines.
- Smart Cities: Intelligent cities that aim to create sustainability conditions, improve the way of life of the population through the analysis of data recollected from cities.
- Smart Energy: Intelligent electric networks that make use of information technology to make the system more efficient, both economically and energetically.

Eye Tracking

Thinking of all the times we can use our eyes during a day, we can quickly realize that Eye Tracking as tons of applications possible, and as it embraces so many activities in our day-to-day life we can also realize that the areas to which we can apply this technology are also varied. With very few exceptions, some thing that has a visual component can be tracked.
Eye tracking can be used in the automotive and medical areas to make our lives safer, the entertainment and web design areas has already benefited significantly by studding the way our visual behavior.
Everyday, as Eye Tracking is used, it is used in new and creative ways and because of that it's application list grows everyday.

Elderly Care

Having talked about IoT and Eye Tracking we can now talk about these two topics focused in a single area, the Elder care area.
Elderly care is the fulfillment of the special needs and requirements that are unique to senior citizens. This broad term encompasses such services as assisted living, adult day care, long term care, among others.

Applications

Interactive TVs

Interactive TVs are one of the possible applications to Eye Tracking technology as they have a particularly interesting aspect that would benefit senior citizens tremendously, the access to a lot of services from home. Some of which could be information research, viewing habits customization or even shopping.

Driving

It's never safe when a senior citizen drives a car, with age reaction times are slower, vision and audition clarity as well as muscle strength and flexibility are lost, some drowsiness begins to show because of certain types of medicine and there seems to be a lack of ability to concentrate. With Automotive Eye Tracking all that changes, it could detect drowsiness or distraction and warn the driver, it could allow a certain degree of personalization and it could allow the car to identify it's driver and change it's settings according to the user's preference.

Medicine

With Eye Tracking technology it could even be possible to detect if an elderly person has, or not, Parkinson's disease through a non invasive method. The theorized test uses infrared light to track the movements of the eye while the person looks at a screen and follows the prompts.
Another use for Eye Tracking could be the diagnose of Alzheimer's disease. The only current ways to determine if a person has, or not, Alzheimer's is through a series of detailed and invasive medical tests, with Eye Tracking there could be a new, non evasive way, to test for Alzheimer's. The only thing the patient would have to do is to look at images on a screen while a camera tracks the movements of his eyes.

The End