Editorial for Volume 9 Number 1: Eye Tracking Interfaces

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Direct manipulation interfaces have had great success largely because they are based on analogies with existing human skills (seizing, moving objects in space), rather than trained behaviors.

Jacob (2000) examines the impact of the technology of virtual reality in the field of human factors. Some of the topics covered are graphics computer visual tracking, tactile and kinesthetic, design interfaces and applications in medicine and aerospace.

Duchowski (2002) mentions a broadly eyetracking applications, providing details on the work of the areas accompanying neuroscience, psychology, engineering and human factors, marketing / advertising, and computer science.

Goldberg, Stimson, Lewenstein, Scott, & Wichansky (2002) conducted eye track which went to evaluate the components of the plan in particular a model of implementation of web-based interface. The software offers independent web content through independent, rectangular, modifiable portlets by client on a page.

Grauman et al. (2003) developed a man-machine interface through blinks and browlift.

Ruddarraju et al. (2003) present a method of eye tracking following the technique of the vision of multi-camera to find and follow the eyes of the customer while cooperating with an application. Proposed improvements to different methods of tracking based on vision, including the use of many cameras to measure the position of the head and increase the range of the sensor.

Amarnag, Kumaran, & Gowdy (2003) mention that the eyes and lips are two promising facial organs that may be useful to create interfaces between man and machine. Monitoring of these bodies can be considered as a first step in the creation of such an interface. Tracking in real time of the eye and lips is in computer - human interface design.

Schiessl, doubt, Thölke, & Fischer (2003) discuss aspects of eye tracking and its application in usability and media research.

Li, Winfield, & Parkhurst (2005) propose a hybrid algorithm for visual tracking based on video that combines features-based and model-based approaches.

Rele & Duchowski (2005) uses visual tracking to evaluate alternative search results interfaces". Used interfaces were the interface of gradient, regularly observed in many tools of web search and an interface that presents data in discrete classifications or components of the synopsis of results.

Chau & Betke (2005) carried out eye tracking in real time and with usb cameras blink detection. The system works with low-cost USB cameras and runs at a speed of 30 frames per second.

Vertegaal, Mamuji, Sohn, & Cheng (2005) proposed the use of eye tracking for the remote control of appliances approach selection. The use of the detection of eye contact for approach selection operations in remote media control devices.

Lin, Ho, Chen, Chiu, & Yeh (2006) proposed a driver's eye tracking of a wheelchair motor for people with physical disabilities.

Poole & Ball (2006) mentioned that the eye tracking is a technique whereby the eye movements of an individual are measured so that the investigated knows both where a person is looking at any given time and the sequence in which the eyes of the person to are changing from one place to another.

Wang, Chignell, & Ishizuka (2006) carried out tutoring empathetic software agents that use eye tracking in real time. Tracking the eye movements is used to monitor the attention and interests of the user and customize the behavior of agents. The system reacts to the eyes of the users information in real-time, recording data from the gaze of the eye and the dilation of the pupil during the learning process.

Duchowski (2007) mentions that there are at least three domains that can benefit from eye tracking research: visual perception, interaction with the computer and computer graphics. The fusion of these themes form a symbiotic relationship. Recent advances in eye tracking technology, specifically the availability of crawlers more cheap, faster, more precise and easier to use.

Jacob (2009) mentions that the problem of the human-computer interaction can be seen as two powerful processors of information trying to communicate through a narrow bandwidth, and a very limited interface, for users and the computers to exchange information.

Marcos & González-Caro (2010) mentioned the behavior of users in the results page of the search engines using eye tracking. The sessions were recorded with an eye tracker to check if the expectation of the questions influences the path in which the customer externally examines the results of a web index page.
Sewell & Komogortsev (2010) conducted a monitoring of the eye look in real time with a web cam of commodity unmodified using a neural network. A computer eyes-guided interface could allow the use of the computer for the disabled. They present a methodology for observation of eye tracking in real time using a standard web camera without the need for modification of hardware or special placement.

Holmqvist et to the. (2011) carried out a guide to methods and measures for eye tracking.

Kassner, Patera, & Bulling (2014) proposed a platform of open source to the omnipresent eye tracking and mobile gaze-based interaction. Pupil - an open source platform accessible, affordable, and expandable for pervasive monitoring of the eyes and the gaze-based interaction. The graphical user interface and the software are platform-independent and include algorithms of generation for the detection and tracking in real time of students, calibration and accurate estimation of the gaze.