Need Finding Analysis

Sneha,Rithvik,Anirudh & Shloka

Eye Pointer - Mouse Cursor Control Handsfree

Sneha ->PES2201800030
Rithvik->PES2201800150
Anirudh->PES2201800644
Shloka->PES2201800502

Excessive use of the mouse can lead to health problems such as repetitive strain injury

Source:
https://www.teach-ict.com/gcse_new/computer%20systems/input_devices/miniweb/pg3.htm

Computer Vision Syndrome affects 75% of the people who work on computers, most markedly those over the age of 40.

This is caused by a decreased blinking rate.

Source: University of Iowa Hospitals and Clinics.

Prolonged computer use with neck bent forward, will cause the anterior neck muscles to gradually get shorter and tighter, while the muscles in the back of neck will grow longer and weaker. This is cited as a cause of neck pain.

Source: Sabeen, Faiza & Bashir, Muhammad Salman & Hussain Shah, Syed Imtiaz & Ehsan, Sarah. (2013). " Prevalance of Neck Pain in Computer Users ". Annals of King Edward Medical University. 19.

The hands free mouse helps individuals with limited to no mobility in their arms. Specifically, for people with Amyotrophic Lateral Sclerosis (ALS) also known as Lou Gehrig's disease.

Source:A. Castillo *et al.*, "Hands free mouse," *2016 IEEE 13th International Conference on Wearable and Implantable Body Sensor Networks (BSN)*, San Francisco, CA, USA, 2016, pp. 109-114, doi: 10.1109/BSN.2016.7516242.

A study conducted proved that gaze pointing was faster than mouse pointing, while maintaining a similar error rate.

Source:Julio C. Mateo, Javier San Agustin, and John Paulin Hansen. 2008. Gaze beats mouse: hands-free selection by combining gaze and emg. 04

Users with cerebral palsy and multiple sclerosis have issues with using the mouse and controlling it.

Source: Cristina Manresa-Yee, Javier Varona, Francisco J. Perales, Francesca Negre, and Joan Jordi Muntaner. 2008. Experiences using a hands-free interface. In Proceedings of the 10th international ACM SIGACCESS conference on Computers and accessibility (Assets '08). Association for Computing Machinery, New York, NY, USA, 261–262. DOI:https://doi.org/10.1145/1414471.1414528

Conclusion

This Human-Computer Interaction application will allow you to control your mouse cursor with your facial movements(winking, head rotations, mouth movements), works with just your regular webcam. Its hands-free, no wearable hardware or sensors needed.