Eye-Controlled Mouse Cursor

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Many technologies and tools have been created internationally to meet the needs of users.

One of the current trends is interface innovations that add new capabilities to computer systems. For example, eye-controlled systems are already used in areas such as medical technologies, assistance to people with disabilities, and others. However, creating an eye-controlled mouse that would allow the user to control a computer with eye movements is still a rarely implemented practice.

The goal of our project is to create a system that will allow people to control computer systems more intuitively and innovatively. The project will be especially useful for people with disabilities, so that they can gain greater accessibility and efficiency in participating in technological processes. The goal is also to improve the experience of controlling a computer, which will contribute to better organization of time and use of resources.

For this, we use the following technologies:

Figma, Adobe XD - for creating user-centered UI, UX design.

React.js - for creating user-centered GUI design.

OpenCV, TensorFlow, Python, PyAutoGUI, Viola-Jones Algorithm, Haar cascade - technologies, libraries, algorithms and other tools required for functionality.

References:

[1] file:///C:/Users/admin/Downloads/Gaze-based_selection_of_standard-size_menu_items.pdf

[2]https://gazerecorder.com/gazepointer/

[3]file:///C:/Users/admin/Downloads/Eye_Tracking_for_Everyone.pdf

[4] https://medium.com/@manchalasreekanth999/building-an-eye-controlled-mouse-using-python-and-opencv-f07934a4e15c

[5] https://pyautogui.readthedocs.io/en/latest/