

Voice Command and Face Motion Based Activated Web Browser for Differently Abled People

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There are many people who are unable to use their hands due to a disability from birth or external factors like accidents. There are many military personnel who have lost their arms and hands because of bombing and shootouts from the war in the country. These people require further assistance from another person to access the Internet. They are embarrassed because they cannot do it independently, and they might hesitate to seek assistance constantly. This also raises the issue of their privacy. But because of technological advancement, now people who are disabled can do their work very easily. There are many developed applications with the voice command ability to search or type something. The main difference between those applications and the proposed system is it has the ability to use voice commands to control and use face detection to control the mouse cursor in the same application. Differently abled and handless people can use this web browser to do their work as a normal person. This proposed browser may use a voice command to control the mouse cursor and it can use voice to text to type URL. Further, computer vision may use to control the mouse cursor. This web browser can use to ease the work of normal people as well as used by disabled personnel. Both the voice command module and the web browser module were created using python. Additionally, the python Application Development Kit was used to develop the front end and back end. The researcher used open-cv to create the cursor control module. Numerous libraries have been used in the system's development. PyQT5 and QtWebEngine were both used in the development of the web browser application module. Google Speech Recognition engine API and PyTsx3 were both utilized in the development of the voice command module. OpenCV-Python-cv2, Numphy, Dilib, and autopsy were used in the creation of the cursor control module.

Keywords: *face detection, speech recognition, assistive technology*