Abstract

In the current technological landscape, advancements continue to shape our digital experiences. A notable innovation is the human-system interface, moving beyond conventional input devices. This paper introduces a groundbreaking approach to human-computer interaction (HCI) by proposing a gesture-based system for cursor control. Unlike traditional peripherals, such as stressed-out mice or Wi-Fi mice with hardware dependencies, the envisioned system relies solely on gesture recognition. Operations like clicking and dragging become intuitive through hand gestures, with the system requiring only a webcam as an input tool. Implementation utilizes OpenCV and Python, with dependencies including numpy, math, wx, and mouse. The user can calibrate the system using real-time camera output displayed on the screen. This novel HCI approach eliminates boundaries, offering a seamless and hands-free interaction paradigm.