

Virtual PC Controller A Software based System for Remote and Gesture based Computer Control

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Abstract: *Advancements in human-computer interaction have led to the development of alternative input mechanisms that reduce reliance on conventional devices such as keyboards and mice. This paper proposes a Virtual PC Controller, a software-based system that enables remote and gesture-based control of a personal computer. The system utilizes computer vision techniques to recognize hand gestures in real time and maps them to corresponding system-level actions such as cursor movement, clicking, and application control. Additionally, a network communication module allows secure remote interaction with the target system. The proposed architecture is modular, cost-effective, and hardware-independent, requiring only a standard camera and network connectivity. Experimental evaluation indicates satisfactory accuracy, responsiveness, and usability under typical operating conditions. The results demonstrate that the proposed system provides an efficient and intuitive solution for touchless and remote computer interaction, with potential applications in remote work, smart environments, and assistive technologies.*

Keywords: Virtual PC Controller, Gesture Recognition, Human-Computer Interaction, Computer Vision, Remote PC Control, Touchless Interaction, Software-Based Input System

