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Virtual Mouse Implementation Using OpenCV, ML, Python

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Abstract: *The implementation of a virtual mouse using OpenCV, Machine Learning (ML), and Python aims to create a system that allows users to control their computer cursor without a physical mouse. This project leverages computer vision techniques from the OpenCV library for hand gesture recognition and machine learning algorithms for accurate cursor control. Through advanced image processing algorithms, the system accurately captures and analyzes hand movements. The virtual mouse system enhances accessibility for individuals with physical disabilities and offers a novel and intuitive way of interacting with computers. The integration of machine learning (ML) and computer vision technologies has paved the way for innovative human computer interaction methods. This paper presents an abstract overview of the development and implementation of a virtual mouse system, leveraging ML techniques, the OpenCV library, and the Python programming language. The proposed system aims to enable users to control the computer mouse pointer through hand gestures, providing an intuitive and hands-free interface.*

Keywords: Computer Vision, OpenCV(Computer Vision Library), Machine Learning, Gesture Recognition, Image Processing

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