

REVIEWER'S REPORT

Manuscript No.: IJAR-58128

Title: Advanced Gesture-Based Virtual Mouse Using Mathematical Landmark Mapping.

Recommendation:

Accept as it is

Accept after minor revision Yes

Accept after major revision

Do not accept (*Reasons below*).....

Rating	Excel.	Good	Fair	Poor
Originality		yes		
Techn. Quality		yes		
Clarity		yes		
Significance		yes		

Reviewer'sID: JPR- Dr. Bharti Bisht

Detailed Reviewer's Report

The manuscript titled “**Advanced Gesture-Based Virtual Mouse Using Mathematical Landmark Mapping**” presents a practical and well-structured touchless human-computer interaction system that enables real-time cursor control using hand gestures captured through a standard webcam. The study effectively integrates MediaPipe hand landmark detection, OpenCV-based image processing, affine coordinate transformation, exponential smoothing, and Euclidean distance-based pinch detection to achieve smooth cursor movement and reliable click functionality without requiring specialized hardware. The work demonstrates strong practical relevance for accessibility applications, contactless computing, and sterile environments, while maintaining real-time performance of approximately 28–32 FPS and reporting click detection accuracy above 94%. The mathematical foundation is appropriate and the implementation appears technically sound; however, the novelty is moderate because similar MediaPipe-based virtual mouse systems and pinch-click mechanisms have been reported in prior literature. The manuscript would be strengthened by providing a clearer comparison with existing studies, explicit mathematical equations for coordinate mapping and smoothing, details regarding parameter selection such as the 35-pixel click threshold and smoothing coefficient, and a more comprehensive experimental evaluation including participant demographics, hardware specifications, lighting conditions, precision, recall, and robustness testing under varying environmental conditions. Additionally, discussion of system limitations, handling of landmark tracking failures, and potential future extensions such as multi-gesture support, scrolling, drag-and-drop functionality, and adaptive learning mechanisms would further enhance the contribution. Overall, the study represents a useful, low-cost, and technically effective gesture-based interaction framework with significant practical value, and it is suitable for publication after minor revisions addressing the above concerns.