Gesture Recognition for Human Computer Interaction Using AI

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Abstract*: In recent years, gesture recognition has emerged as a powerful interface for human-computer interaction (HCI), offering an intuitive and seamless way for users to communicate with devices without physical contact. This project aims to develop a gesture recognition system using artificial intelligence (AI) techniques to interpret hand gestures, enabling natural interaction between humans and computers. The proposed system leverages a Raspberry Pi, coupled with a camera, to capture real-time images or video streams of hand gestures. These images are processed using computer vision techniques and analysed with deep learning algorithms, specifically Convolutional Neural Networks (CNNs), to classify and interpret different hand gestures.*

Keywords: Gesture Recognition, Human-Computer Interaction (HCI), Artificial Intelligence (AI), Computer Vision, Machine Learning, Deep Learning, Neural Networks, Pattern Recognition

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