Advanced Human Pose Recognition Technology

Tech ID: 33539 / UC Case 2023-758-0

BRIEF DESCRIPTION

This technology revolutionizes human pose recognition by overcoming dataset and environmental limitations.

SUGGESTED USES

·Enhanced augmented reality experiences by providing accurate human poses in real time or from 2D images.

·Improved surveillance and security systems through precise identification of individual poses.

·Next-generation gaming interfaces that understand player movements in real time with high accuracy.

·Advanced fitness and dance apps that track and analyze user movements for personalized feedback.

·Robotics and autonomous systems for better understanding of human actions.

FEATURES/BENEFITS

·High cross-dataset performance, drastically reducing errors in unknown environments.

·Does not require special clothing or markers for pose recognition.

·Able to decode camera position as well as pose, enhancing the adaptability of the system.

·Can use synthetic data points for improved training through an innovative encoding scheme.

·Preserves occlusion information, aiding in more accurate 3D pose estimation from 2D images.

TECHNOLOGY DESCRIPTION

This cutting-edge technology leverages abstract images and viewpoint/pose encoding for recognizing human poses in images accurately across various environments and datasets. Unlike traditional methods, it does not rely on special clothing or single-scenario training, making it versatile and practical for real-world applications in various environments and using commonly available cameras, eg webcams or phone cameras. The key development of the project is to decouple training from deployment: the system is trained on a large image dataset from a lab-based environment, but unlike existing systems can be deployed in any new environment using any common camera.

STATE OF DEVELOPMENT

The code works well in a research environment, but would require significant development to be widely deployed. In particular, there are two orthogonal components to our code: image-to-abstract, and abstract-to-pose-and-viewpoint. The 2nd is working virtually perfectly using all available research-level datasets; the first works well but is being improved and we see no significant hurdles to getting it working as well as the 2nd. Together they would still require significant development before being deployed widely, but again we

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

» **Communications**
» Other
» **Imaging**
» Software

RELATED CASES

2023-758-0

anticipate no fundamental barriers to wide deployment.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20250173891	05/29/2025	2023-758
United States Of America	Published Application	20240428456	12/26/2024	2023-758

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