Human Activity Recognition or HAR is the process of interpreting human motion using computer and machine vision technology. Human motion can be interpreted as activities, gestures, or behaviors which are recorded by sensors. The movement data is then translated into action commands for computers to execute and analyze human activity recognition code.

Activity tracking allows both prediction and analysis of human behavior, thus unlocking unseen benefits and eliminating manual input.

Although its potential is yet to be discovered, it has proved useful in different fields, including sports training, security, entertainment, ambient-assisted living, and health monitoring and management.

Human pose estimation, in particular, has gained a lot of traction because of its usefulness and versatility. According to numerous studies reliable posture labels in hospital environments can augment research and help better monitor patient clinical journeys.

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What’s the big deal then? Well, just like any other AI-based subset, pose tracking promotes automation. That is, activity tracking allows both prediction and analysis of human behaviour, thus unlocking unseen benefits and eliminating manual input

Human activity recognition from video allows autonomous vehicles to sense and predict pedestrian behavior much more thoroughly – promoting more consistent driving. You can even use it to train a new employee to correctly perform a task or practice your moves when dancing or working out. Moreover, this technology can be used in many different use cases like [gaming](https://indatalabs.com/industry/ai-game-solutions) controllers, human-robot interactions, and even virtual reality scenarios. We’ll dwell on some of the most popular applications later in the article.Technically wise, computer vision human activity recognition remains a challenging domain. The complexity of activity detection and the number of inhabitants present in the analysis are the main issues.

First, the complexity of human pose estimation was approached through traditional techniques. The latter included Hidden Markov Models and Support Vector Machine techniques. However, they were unable to capture complex movements with a sequence of micro-activities. That is why researchers tapped into a recent shift in machine learning techniques and data mining. This made deep learning a predominant technology to tackle the challenge of activity detection. The input of HAR models is the reading of the raw sensor human activity recognition dataset and the output is the prediction of the user’s motion activities. Here’s what goes in between.

All HAR systems can be grouped into two categories. The first relies on sensor-based activity recognition. It means that a human should place wearable sensors on their body for the system to collect data.

The second approach is vision-based, i.e., human activity recognition from video or images. In this case, the system gathers data with a camera to identify activities. Human activity recognition with smartphones is also a widespread data source.