

Market Release of ManoMotion ActivityTracker, a product for tracking human activities and gestures in rooms and offices

ManoMotion has, in partnership with Intel, developed an easy-to-use computer vision based, AI solution. It has now been productified in a standard hardware package with an Intel NUC small form factor computer, camera, and preinstalled tracking software from ManoMotion. This product will track human activities and gestures to improve communication in offices and rooms.

Conference room devices play a crucial role in enabling effective communication and collaboration in today's increasingly remote and hybrid work environments. These devices, ranging from high-quality webcams and microphones to touch-enabled displays and centralized control systems, empower businesses to host seamless video conferencing sessions, share ideas visually, and manage meeting agendas efficiently.

Advancements in artificial intelligence have an impact on many aspects of a business, and this is no exception when it comes to communication. ManoMotion have developed a solution for hand and gesture tracking, optimized in partnership with Intel. An interfaceable solution that makes use of computer vision techniques, the Conference Room Hand and Motion Detection solution is used to improve meeting quality and increase employee engagement. The motion tracking technology can be used to issue commands to the device while it tracks up to 12 individuals in a conference room.

Office and Conference Room Hand and Motion Detection is based on object recognition and motion detection machine learning models, ManoMotion's software solution for office and conference room devices allows real time human pose estimation with latency requirement less than 25 milliseconds. When inferencing is optimized with Intel's OpenVINO toolkit, latency can be reduced to 14.1 milliseconds, leading to a drastically increased performance.

A technique used by the Intel and ManoMotion computer vision engineers was quantization, allowing for greater throughput. The optimized resized model gives 2.6 times throughput over original model, with minimal loss in accuracy. FP16 Model can be accelerated through GPU with same latency measures, while CPU utilization is just 7% to 10%. Different generations of Intel Core processors were benchmarked against each other, and the comparison



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showed greater performance in newer generations, even for lower capacity processors. An OpenVINO INT8 model running on an Intel(R) i5-1250PE CPU @ 2.70GHz gave a 1.2 times improvement in latency over OpenVINO INT8 on Intel(R) i7-1185G7@ 3.00GHz.

The results show increased performance on a dynamic artificial intelligence model, and its flexibility when integrated into hardware makes the workload a robust solution for any smart conference room device.

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Lars Österberg, CEO, ManoMotion
Robert McLoughlin, for Intel

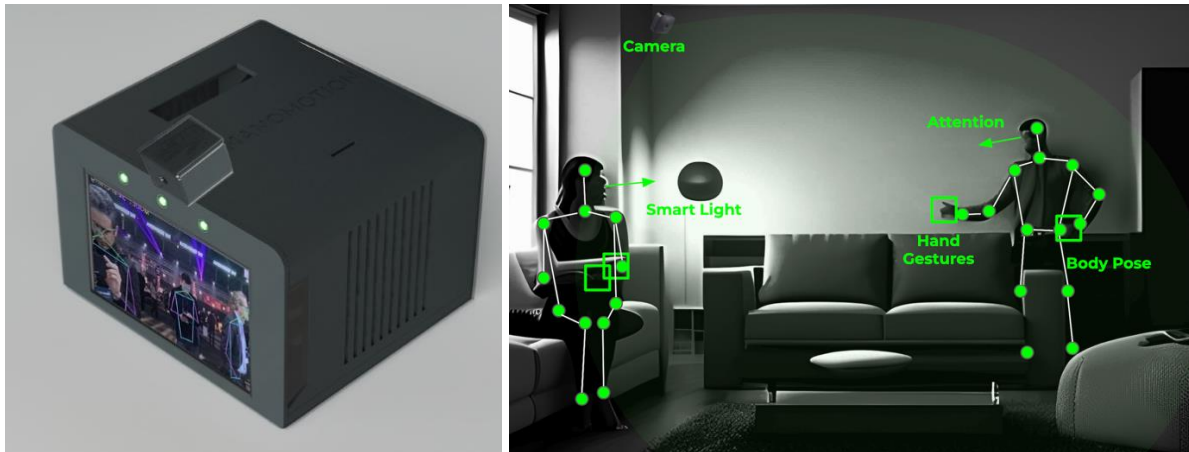


Figure 1. Left: The hardware packaging with Windows based Intel NUC and standard webcam running ManoMotion body tracking.

Figure 2. Right: Visualizing a use case: tracking people and their activities in an office room.

