

# RESEARCH USES VR FOR HUMAN GAIT TRACKING PROJECT

Research uses VR to determine whether humans naturally entrain their motion to that of other people in the same environment.

Primarily interested in research on the behaviour of humans in the built environment, the Biomechanics & Immersive Technology Laboratory sits within the School of Engineering at the University of Leicester. Dr Mateusz Bocian, an expert in structural dynamics and pioneer in using virtual reality (VR) in research on human interaction with lightweight civil engineering structures, and his PhD student, Mr Artur Soczawa-Stronczyk, are developing a VR interface for the investigation of crowd movement.

As a Proof of Concept, for a period of up to 2.5 hours each, they required participants to walk with an avatar in VR while having their gait monitored.



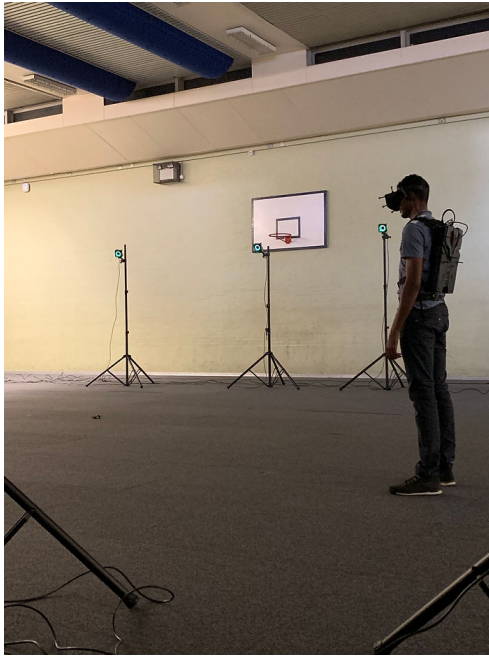
## The problem

Dr Bocian and Mr Soczawa-Stronczyk needed to be able to track a pedestrian continuously walking in a loop where a long straight walk had to be 15m and turns had to be 5m in diameter, necessitating a large size tracking system for an experimental campaign lasting two full days.

## The solution

The team from Target3D deployed a 24 Camera Prime 17W OptiTrack system capable of attaining this coverage in a portable setup, utilising tripods and cable mounts. After setup in a demanding location, we ensured the system ran to a high standard and supported the researchers to acquire their data.

The ongoing research seeks to determine whether humans naturally entrain their motion to that of other people in the same environment and, in a broader sense, to validate the VR environment as a proxy of real life conditions in the context of



locomotion. It is anticipated that the current research will provide evidence for the applicability of immersive and interactive VR in research on crowd dynamics, ranging from human movement in crowded environments, city planning and evacuation studies, to human loading on structures such as bridges, concert arenas and grandstands.

Reflecting on the project, Dr Bocian commented:

*“Professionalism and commitment – these two qualities best describe our experience with Target3D. Apart from the generous remote support offered in the run-up to our experimental campaign, Target3D team came to our testing site and offered hands-on assistance.*

*This greatly improved our experimental protocols, simplifying the pipeline and ensuring value for money.”*

Think you might need to use mocap tracking in your research project, but need a bit of guidance? [Get in touch](#) to find out how we can help.

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