

Title	動作推定を用いた野球投球動作の習得方法の提案
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## Abstract

動作推定を用いた野球投球動作の習得方法の提案

Proposal of a Method for Learning Baseball Pitching Motion Using Pose Estimation

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The most common ways to learn sports techniques are by watching other athletes for reference, by watching videos of yourself, or by having an instructor teach you. However, with these methods, it is difficult to clearly see the difference from the target movement, so there is a problem that there is a possibility of learning the wrong movement.

In this research, we propose a system that uses VR and MediaPipe Pose to allow users to check the actions of a model and themselves in real time. Focusing on the right knee joint angle in the pitching motion of baseball, we compared practice using this VR system, practice by watching and imitating general videos, practice by watching videos while paying attention to the angle of the knee, and practice displayed the angle of the knee. We will evaluate whether there is a difference in reproducibility among the four VR practice methods shown.

As a result of the experiment, in all four exercises, I was able to get closer to the model knee joint angle than before the exercise. In particular, with the proposed VR system, the joint angle of the model knee could be reduced to 3.81 degrees for all experimenters, including those who had no experience playing catch, and 0.08 degrees for those with experience playing catch. On the other hand, in the VR system that displayed a comparative view of the knee angle, it was found that the knee was flexed 7.82 degrees to 12.89 degrees more than the model.

When learning a specific movement or technique in sports, etc., one practice method is to imitate an expert to get the hang of it or to find opportunities to improve your level. We hope that the system proposed in this study, which allows users to check the model and the user's actions in real time, will be able to support technical acquisition.

Keywords: VR, MediaPipe, Pose Detection, Baseball Pitching