

## **A motion Capturing Technique Employing Factorization**

### **Abstract**

A motion capturing technique based on factorization is presented in this paper. Factorization is a novel technique for recovering 3-D shape of a rigid object from a single video image stream. The technique is extended in this paper to motion capture by employing multiple settled video cameras and by defining an extended measurement matrix which describes motion of an object. The main advantage of the proposed technique is that one does not have to calibrate the video cameras, since the camera parameters are not used in the recovery calculation. Another advantage is that it recovers the motion of an object during observation all at once and therefore alignment of the motion in the time axis is not necessary. The technique is applicable to any object irrespective of rigid or non-rigid. In the performed experiments, several human motions have been successfully recovered in a 3-D way by the proposed technique.