

Abstract

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By nature, humanoid animation is complex, and the task of creating an interactive humanoid is very challenging when trying to take human motor skills into account. The animation of interactive virtual characters playing sports is a hot topic of research. It has many applications in video games, sports science, and robotics. In this project, a dynamic system that reconstructs motion capture data is demonstrated. This system is applied to a virtual goalkeeper, and uses limited motion capture data combined with the target location of a soccer ball to achieve physically plausible goalkeeper animations. This system bypasses complex physical simulations, and takes advantage of the short burst of dynamic motion required in interactive environments. Along with this system, pose-based animation is utilised to enable the goalkeeper to catch the ball using inverse kinematics. Using the combination of the reconstruction of motion capture data and pose-based animations, a real-time physically plausible system for goalkeeper animations is presented.