

Quadruped Animation

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Films like Shrek, Madagascar, The Chronicles of Narnia and Charlotte's web all have something in common: realistic quadruped animations. While the animation of animals has been popular for a long time, the technical challenges associated with creating highly realistic, computer generated creatures have been receiving increasing attention recently. The entertainment, education and medical industries have increased the demand for simulation of realistic animals in the computer graphics area. In order to achieve this, two main challenges need to be overcome: gathering data that embodies the natural motion of an animal, and second applying this data to 3D models. To date the most realistic motion data comes from motion capture. For humans this data is widely available but the same cannot be said for animals. The reasons are that attaching the equipment is difficult and capturing different motions within a restricted environment does not always produce adequate results. This has led to the development of different video-based techniques, which can provide the data needed in order to create realistic animal animations.

In the proposed state of the art report, we will provide an overview of the common techniques used to date for realistic quadruped animation. This includes an outline of the various ways that realistic quadruped motion can be achieved, through video-based acquisition, physics based models, inverse kinematics, or some combination of the above.