Template based procedural rigging of quadrupeds with custom manipulators


Abstract

Character rigging is a process of endowing a character with a set of custom manipulators and controls making it easy to animate by the animator. These controls consist of simple joints, handles, or even separate character selection windows. This research paper presents an automated rigging system for quadrupedal characters with custom controls and manipulators for animation. The full character rigging mechanism is procedurally driven, based on various principles and requirements used by the riggers and animators. The animation is achieved iteratively by creating widgets according to the character type. These widgets then can be customized by the riggers according to the character shape, height, and proportion. Their joint locations for each body part are calculated, and widgets are replaced programmatically. Finally, a complete and fully operational procedurally generated character control rig is ensured and tested with the underlying skeletal joints. The functionality and feasibility of the rig was validated from various sources of actual character motion and character requirements creation was met. The final rigged character provides an efficient and easy-to-implement control with no rigging and a high frame rate.

Author keywords

Animation, Character Rigging, Procedural Rigging, Quadruped Rigging.

Indexed keywords

Engineering control/automation, Computer science, Manipulators.

Character motion, Character Rigging, Fully operable, High frame rate.

Procedural Rigging, Quadruped Rigging, Requirements creation, Skeletal joints.

Engineering main heading

Animation.