

Future of Computer Animated Characters

What's next?

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Abstract—Where are film and game animation systems going? What do we mean? Well analogous to how the animated movie industry has replaced hand drawn animations with computer generated solutions. Why? With the advancement of faster more powerful computers we can create computer generated scenes and animations in real-time that are almost indistinguishable from the real-world.

Index Terms—procedural, intelligent, physics-based, goal-driven, animation, characters, key-framed, beyond, inverted pendulum, balancing, autonomous, intelligent, biped



1 INTRODUCTION

WH ere are character animations going? Will procedural techniques replace hand created animations? Remember the old “hand-drawn” cartoon animations? Animations could go the same way! Instead of artists manually creating and editing existing key-framed movements, they could be created automatically based on intelligent physics-based algorithms (e.g., [1], [2]).

2 FRACTALS, PHYSICS, BIOMECHANICS, AND MORE

These are very exciting times for computer graphics animation. A number of diverse and original techniques are becoming plausible and practical with computers increasing in speed. For example, virtual humans solutions are mixing robotics based methods with biomechanically inspired techniques to produce more life-like physically correct and interactive characters that break the mold. The days of hard-coded, inflexible, data-driven solutions are making way for procedural self-driven smart solutions.

3 SUMMARY

We are going to see film and game animations take on a new form. Similar, to how we saw computer generated graphics replace traditional hand drawn scenes, we will see procedural physics-based solutions replace traditional pre-recorded key-framed motion capture solutions. Exploiting techniques from multiple research disciplines (such as biomechanics, robotics, and computer science) to create intelligent self driven characters.

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REFERENCES

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