Dynamic Simulation of Humanoid Motion
Organizers & Chairs: Jessica Hodgins, Nancy Pollard

Simulating Leaping, Tumbling, Landing, and Balancing Humans
W. L. Wooten[1] and J. K. Hodgins[2]
[1]Pixar Animation Studios and [2]Georgia Institute of Technology

- Describe methods for automatically generating animated behaviors using dynamic simulation

- Behaviors are generated with transitions between parameterized basis controllers

- Four basis controllers created broad jumps, standing jumps, somersaults, and platform dives

- Parameterized basis controllers are useful in creating complex, dynamically simulated behaviors
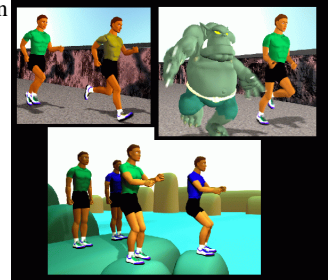

Interactive, Force-Based Motion Editing for Locomotion Tasks
N. S. Pollard and F. Behmaram-Mosavat
Brown University

- Goal: realistically alter motion sequences

- Approach: analytic scaling of ground forces

- New runs and jumps, new characters

- Basic physical constraints are maintained

Editing Dynamic Properties of Captured Human Motion
Z. Popovic
University of Washington

Dynamic Simulation of Human Movement Using Large-Scale Models of the Body
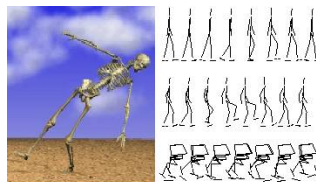M. G. Pandy and F. C. Anderson
University of Texas, Austin

Towards Agile Animated Characters
M. Van de Panne, J. Lazlo, P. Huang and P. Faloutsos
University of Toronto

- Skills for dynamically simulated smart characters

- Methods: limit cycle control, finite horizon planning

- Results: walking, falling, hopping, flipping

- Animation and robotics share many goals

Dynamic Filter - Concept and Implementation of On-Line Generator for Human Figures
K. Yamane and Y. Nakamura
University of Tokyo

- Dynamics filter: a motion generator that converts a physically inconsistent motion into a consistent one to minimize the size of database required to generate human-like motions for human figures.

- Apply stabilizing feedback control and local optimization based on the equation of motion

- Various motions including those in different environment were created from motion capture data

- Dynamics filter proved to be effective in generating a variety of motions from a small set of motions