



Animation for Computer Games

COMP 477/6311

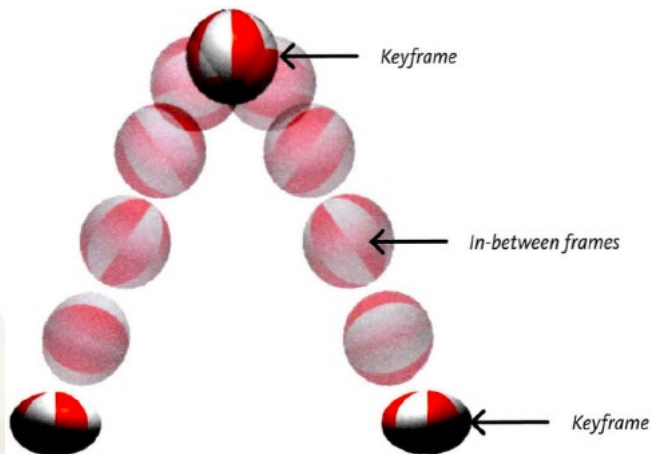
Prof. Tiberiu Popa

Physics-based Animation

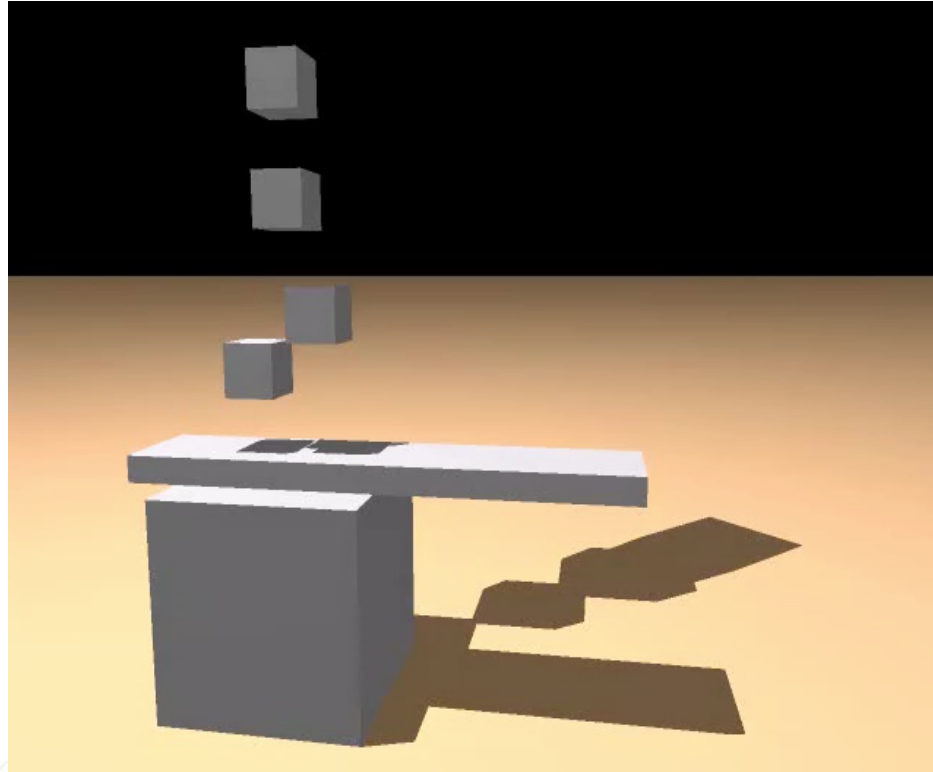
A lot of math and a little bit of physics

The Basics

- Keyframe animation is v. tedious
- Alternatives are:
 - Performance capture
 - look at real-life performances
 - Record
 - Retarget
 - Physics-based animation
 - Compute the animation as the result of a physics simulation



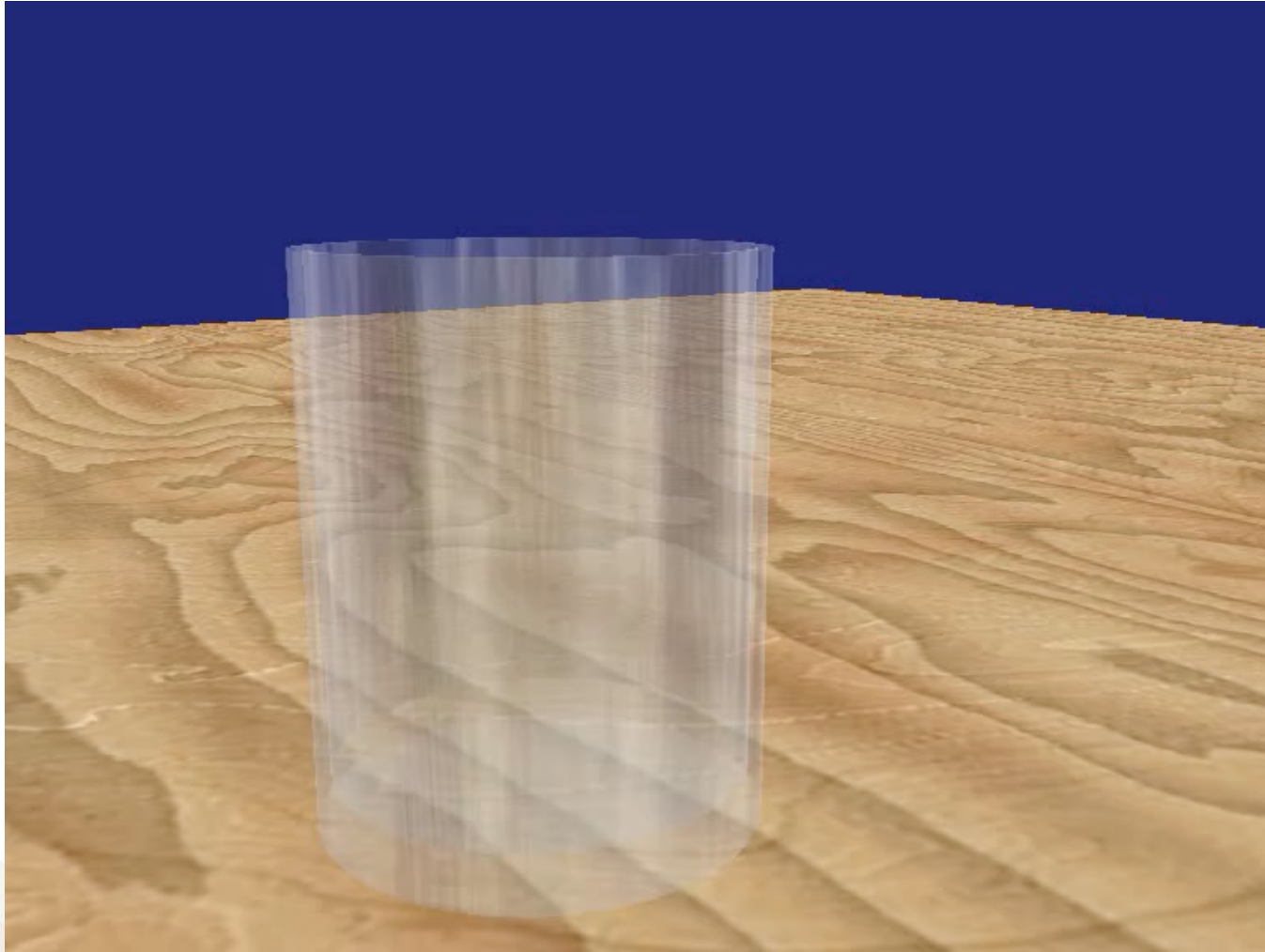
Physics in Computer Graphics



Physics in Computer Graphics



Physics in Computer Graphics



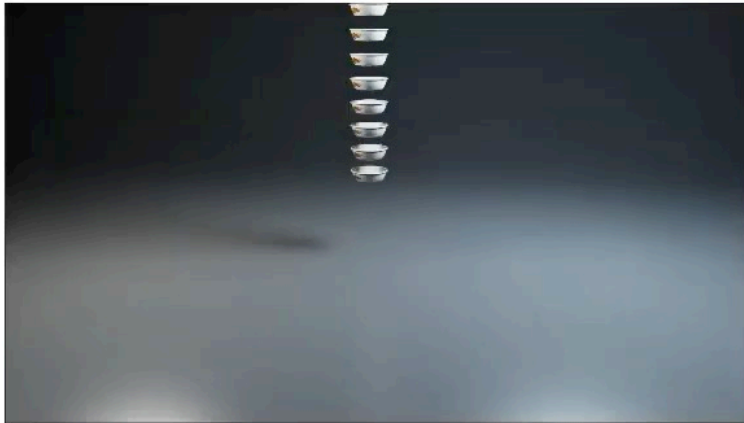


Combinations

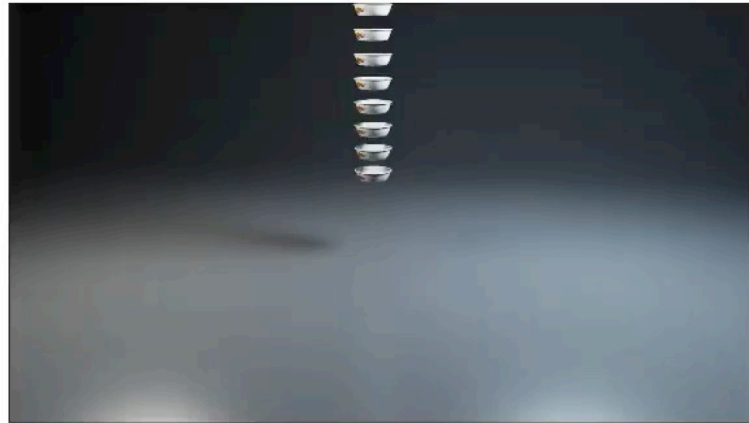


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WELL-CONDITIONED



Primal



Dual

7 NVIDIA

SCA2020 Video Abstract: Primal/Dual Descent Methods for Dynamics
<https://www.youtube.com/watch?v=uvb9pwDdZng&feature=youtu.be>

How does it work?

- White board