

Department of Computer Science  
University of Houston

**SEMINAR SPRING 2013**

**WHEN:** FRIDAY, MARCH 29, 2013  
**WHERE:** PGH 232  
**TIME:** 11:00 AM

**SPEAKER:** Dr. Jin Huang, Zhejiang University, China

Host: Dr. Guoning Chen

**TITLE:** Controllable Animation and Remeshing

Simulation is an important approach to generate animation, but it is often hard to be controlled. In this talk, a physically based sequence editing method will be introduced to intuitively adjust an elastic animation into a desired one. We formulate our motion editing as an optimization problem with dynamics constraints to enforce a physically-plausible result. Through linearization of the editing around the input trajectory, we simplify this constrained optimal control problem into an unconstrained quadratic optimization. The optimal motion thus becomes the solution of a dense linear system, which we solve efficiently by applying the adjoint method in each iteration of a conjugate gradient solver. The key idea and implementation are simple, but the method is comparable to, even surpasses, the state of the art. Besides, some of our other ongoing researches about controllable animation and remeshing will be briefly introduced.

**Bio:**

Jin Huang received the PhD degree from the Computer Science Department, Zhejiang University in 2007 with Excellent Doctoral Dissertation Award of the China Computer Federation (CCF). He is an associate professor in the State Key Laboratory of CAD & CG at Zhejiang University, P.R. China. His research interests include geometry processing and physically based simulation. He has served as a reviewer for the ACM SIGGRAPH, the EuroGraphics, the Pacific Graphics, and the TVCG. He is now a visiting faculty in Caltech.