



SCHOOL OF COMPUTER SCIENCE

Faculty Candidate

Stelian Coros

Disney Research, Zurich

Character Animation: From Virtual Environments to the Real World

Computer graphics techniques enable the creation of immersive virtual worlds that capture our imagination. To a large extent, the appeal of these worlds is that they place no limits on the types of objects, characters and environments that can be conceived and brought to life. Rapid manufacturing devices hold the promise of bringing this freedom to the real world, by allowing anyone to create physical prototypes of digital assets. However, to unleash the full potential of this technology, there is a need for computational design tools that process digital content into forms suitable for fabrication. A particularly interesting and challenging aspect of this problem—one that bridges the fields of computer animation, robotics, and biomechanics—is that of creating physical representations of animated virtual characters. In this talk, I will detail the steps I have taken towards addressing this challenge. In particular, I will present a locomotion control framework applicable to both physically-simulated characters and legged robots, I will describe an interactive design system that allows animated mechanical characters to be easily created, and I will summarize a method for controlling the deformation behavior of real-world objects.

Bio:

Dr. Stelian Coros is a Research Scientist at Disney Research, Zurich. Before joining Disney, he obtained his PhD in Computer Science from the University of British Columbia. Stelian's research lies at the intersection of Computer Graphics, Biomechanics, Robotics and Fabrication. More specifically, he is interested in models of motor control, motion planning, physics-based simulation and computational design methods. The overarching goal of his work is to develop autonomous virtual characters and legged robots that can move with life-like grace and agility.

Thursday, April 3
1 p.m. GHC 6115

Host: Nancy Pollard

For Appointments: Contact Kimm Mills (kmmills@cs.cmu.edu, x8-4985)