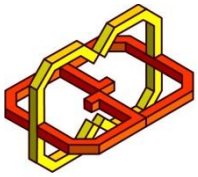

Technion-Israel Institute of Technology

Computer Science Department

Center for Graphics and Geometric Computing

CGGC Seminar

Prof. Myung Soo Kim

Computer Science and Engineering Department, Seoul National University

Efficient Collision Detection and Avoidance for Tree Structures using Sweep-based BVH

We present an interactive tree modeling and deformation system that supports an efficient collision detection and avoidance using a bounding volume hierarchy of sweep surfaces. Starting with conventional tree models (given as meshes), we convert them into sweep surfaces and deform their branches interactively while detecting and avoiding collisions with many other branches.

Multiple tree models (sharing the same topology) can be generated with great ease using the sweep-based approach, and they can serve as a basis for the generation of a multiparameter family of trees. Using a similar technique, we can also develop a compact modeling scheme for human lung anatomy (with lung lobes, bronchial trees, and pulmonary blood vessels), and demonstrate a plausible deformation (with collision detection and avoidance) for the whole anatomical structure in an interactive speed.

The lecture will be held on Sunday, 16.7.2017, at 13:30, Taub 337

הזמנה זו מהווה אישור כניסה עם רכב לטכניון