

Technion-Israel Institute of Technology

Computer Science Department

Center for Graphics and Geometric Computing

CGGC Seminar – M.Sc. Talk

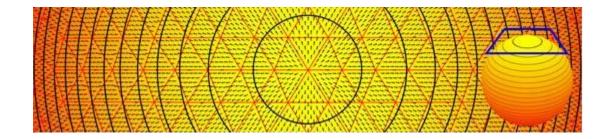
Alexandre Djerbetian

Computer Science Department, Technion-Israel Institute of Technology

Piecewise Linear Tangent Vector Fields on Triangulated Surfaces

Tangent vector field processing on discrete surfaces poses many challenges, one of the first being the choice of representation. The popular choice of piecewise-constant vector fields per face leads to very simple expressions and algorithms, at the price of lower accuracy and difficulties in defining derivatives and smoothness energies. Piecewise-linear vector fields on vertices lead to better results, but also to a much higher complexity due to the use of curved triangles, making important differential operators challenging to compute. We propose a very simple, yet powerful, edge-based discrete representation of tangent vector fields, which can be trivially generalized to represent N-RoSy fields. Our representation is as simple as the face-based representation (allowing to easily compute operators such as divergence and curl), yet has accuracy comparable to vertex-based representations. We demonstrate applications of this representation to tangent vector field design under a variety of constraints.

This talk summarizes the M.Sc. research of the speaker under the supervision of Prof. Miri Ben-Chen.



The lecture will be held on Sunday, 13.12.2015, at 13:30, Taub 337

הזמנה זו מהווה אישור כניסה עם רכב לטכניון