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CS-Colloquium

The discrete Morse theory of Delaunay complexes.

Prof. Herbert Edelsbrunner

IST Austria

Wann? 20. November 2013, 15:00 Uhr

Wo? Hörsaal 3
Währinger Straße 29
1090 Wien

Abstract

Given a finite set of points in \mathbb{R}^n , we consider the filtration of alpha complexes and show that this defines a generalized discrete Morse function on the Delaunay triangulation. Using this insight, we extend the wrap algorithm -- a successful method for surface reconstruction -- from three to n dimensions.

This is joint work with Ulrich Bauer.

Bio

Herbert Edelsbrunner is Professor at IST Austria. He graduated from the Graz University of Technology and spent 20 years as faculty at the University of Illinois at Urbana-Champaign and at Duke University. He co-founded Geomagic, a software company in the field of Digital Shape Sampling and Processing, which made a business out of the wrap algorithm. His research areas are algorithms, computational geometry, computational topology, and applications to biology.

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