



Diplomanden- und Doktorandenseminar
des Instituts für Informatik

ProtoSphere: A GPU-Assisted Prototype Guided Sphere Packing Algorithm for Arbitrary Objects

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In this talk, we present a new algorithm that is able to efficiently compute a space filling sphere packing for arbitrary objects. It is independent of the object's representation (polygonal, NURBS, CSG,...); the only precondition is that it must be possible to compute the distance from any point to the surface of the object. Moreover, our algorithm is not restricted to 3D but can be easily extended to higher dimensions.

The basic idea is very simple and related to prototype based approaches known from machine learning. This approach directly leads to a parallel algorithm that we have implemented using CUDA. As a byproduct, our algorithm yields an approximation of the object's medial axis that has applications ranging from path-planning to surface reconstruction.



Mittwoch, den 08.12.2010

15 Uhr s.t. in Raum 106, IfI, Julius-Albert-Straße 4