



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 1 ,Ziskind Building
on Thursday, Aug 04, 2016
at 11:30

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Scalable Locally Injective Mappings

Abstract:

We present a scalable approach for the optimization of flip-preventing energies in the general context of simplicial mappings, and specifically for mesh parameterization. Our iterative minimization is based on the observation that many distortion energies can be optimized indirectly by minimizing a simpler proxy energy and compensating for the difference with a reweighting scheme. Our algorithm is simple to implement and scales to datasets with millions of faces. We demonstrate our approach for the computation of maps that minimize a conformal or isometric distortion energy, both in two and three dimensions. In addition to mesh parameterization, we show that our algorithm can be applied to mesh deformation and mesh quality improvement.