

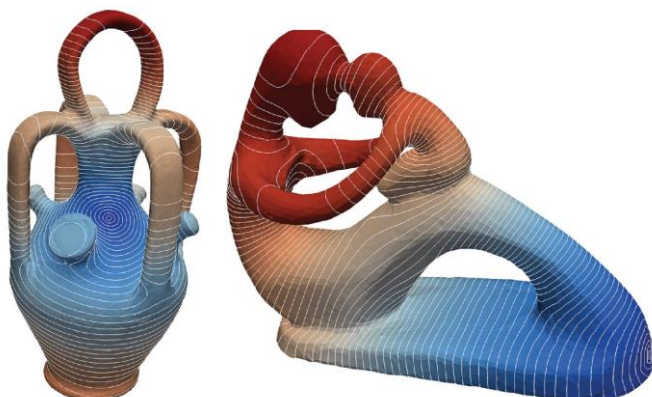
## Studienarbeit:

### Vertex Morphing Filtering with Geodesic Distances in Kratos

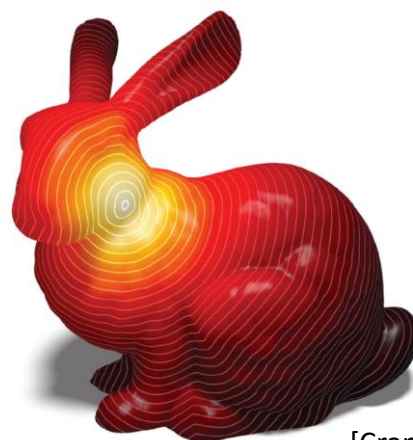
Vertex Morphing is a free-form, node-based parameterization and shape optimization method using gradient-based algorithms.

It uses filter functions in order to smooth the sensitivity and shape update field consistently. These filter functions are usually formulated with respect to Euclidean distances. As a result, the shape can not penetrate itself during the optimization process, which is beneficial regarding the robustness of the method., though not fully consistent with the theoretical background of shape optimization.

In this study project, the filter functions shall be reformulated with respect to other distances operating on the surface, e.g. geodesic or biharmonic distances. For that, methods to compute these surface distances, like the heat method [Crane] or others [Lipman], have to be implemented in the framework Kratos Multiphysics.



[Lipman]



[Crane]

Basic knowledge in C++ and python are essential for a successful work with Kratos Multiphysics.

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Bearbeitungs-

sprache:

Starttermin:

Deutsch oder Englisch

variabel