

Geodesic models with convexity shape prior

Motivation

- Convex shapes arise frequently in nature.
- We propose an image segmentation method taking advantage of a convexity prior
- Relies on an active contour model, with an infinite penalization of negative curvature
- Keywords : Non-holonomic vehicle, Reeds-Shepp car, Euler elastica, Dubins car

Demo proposal

- Allow the user to place two (or more) points on a contour, and adjust a few parameters.
- Compute and display the globally optimal paths.



- Requires a GPU, and the cupy library,...
- Related preprint : *Geodesic Models with Convexity Shape Prior*, Chen, M, Shu, Tai, Cohen