# Globally optimal paths with obstacles and a curvature penalty

Motivation

- Geodesic paths are at the foundation of various motion planning and image processing problems.

- Imposing a curvature penalty leads to a variety of

- Keywords : Non-holonomic vehicle, Reeds-Shepp car, Euler elastica, Dubins car

Demo proposal

- Allow the user to interactively place obstacles, seed points and tip points, and choose a vehicle model.
- Compute and display the globally optimal paths.
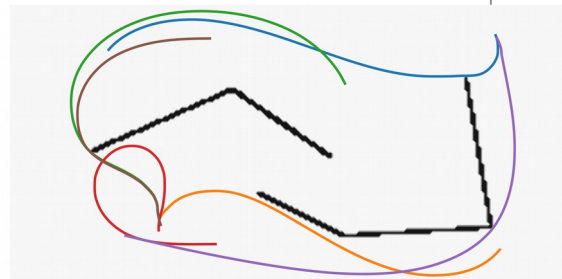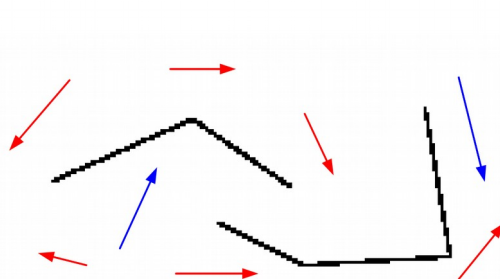
- Works best on a GPU...
- Related preprint : *Massively parallel computation of globally optimal shortest paths with curvature penalization,* M, Chen, Desquilbet, Dreo, Gayraud