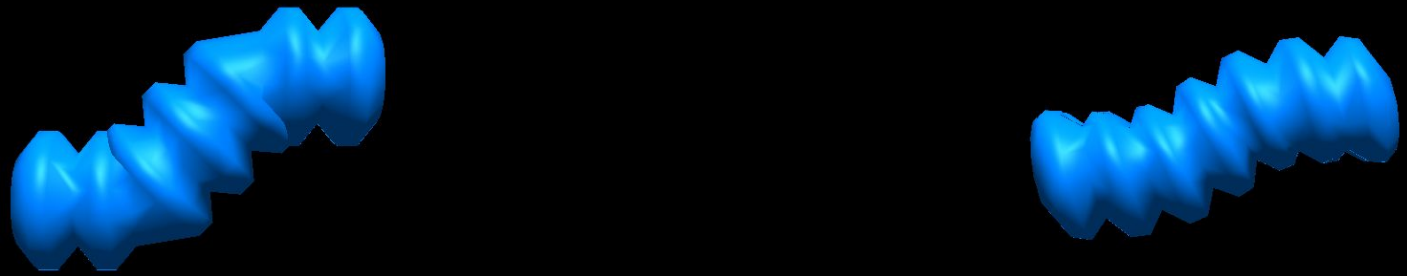
Delta Mush



Why is Delta Mush useful?

Natural looking animations

smooths arbitrary deformation of a mesh while maintaining the original detail of the model

Time Saver

simple, fast, flexible; unlike manual editing alternatives

For those interested in reading the full paper:
https://dl-acm-org.emedien.ub.uni-muenchen.de/doi/pdf/10.1145/2633374.2633376

Overview of Core Algorithm

1. Laplacian Smoothing of copy of original mesh
2. Calculate Rest Coordinate System
3. Calculate vertex offset with RCS
4. Deform original mesh
5. Smooth Deformed Mesh
6. Calculate Current Coordinate System of smoothed deformed mesh
7. Calculate final vertex positions with CCS

1. Laplacian Smoothing

2.
Local Rest Coordinate System

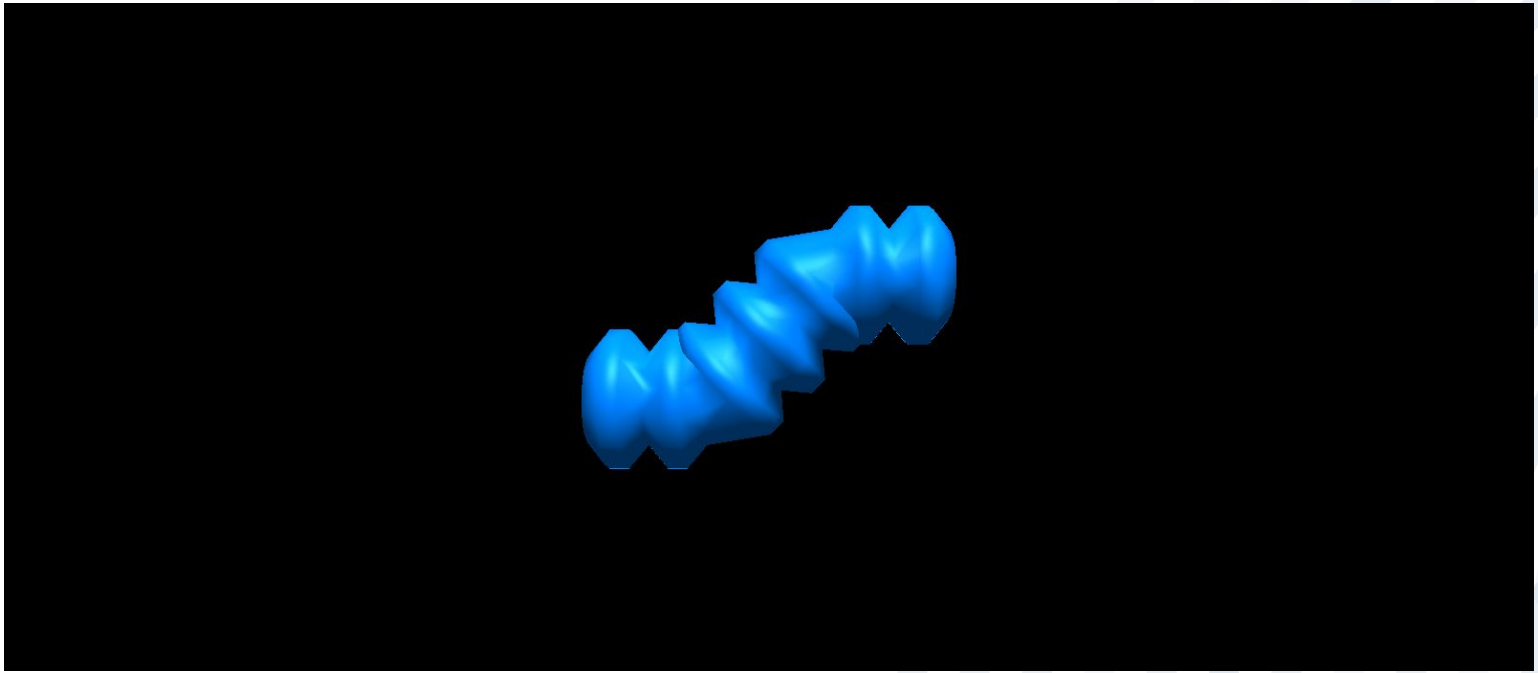
$R_i = [t_i \ n_i \ b_i \ s_i]$

3.

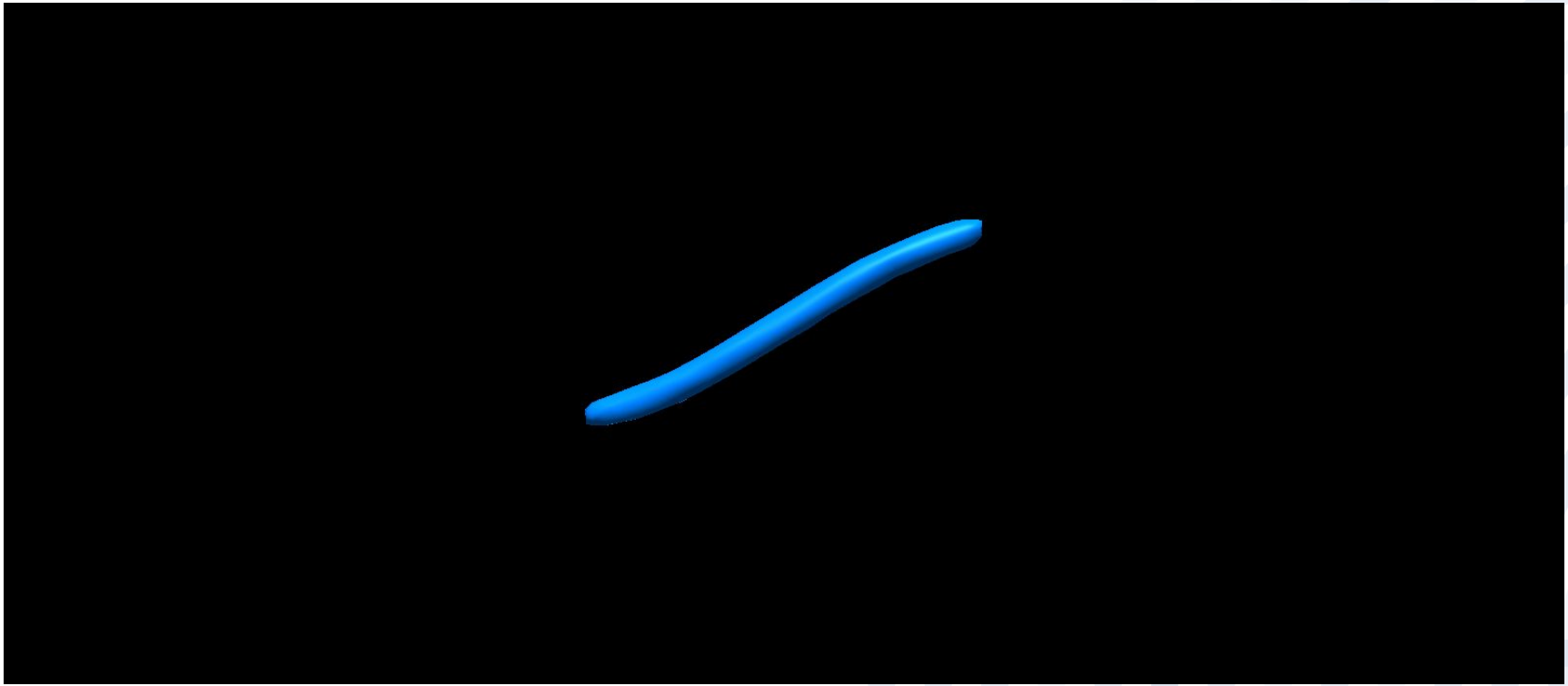
Vertex Offset

$$v_i = R_i^{-1} p^i$$

4. Deform original mesh



5. Smooth deformed mesh



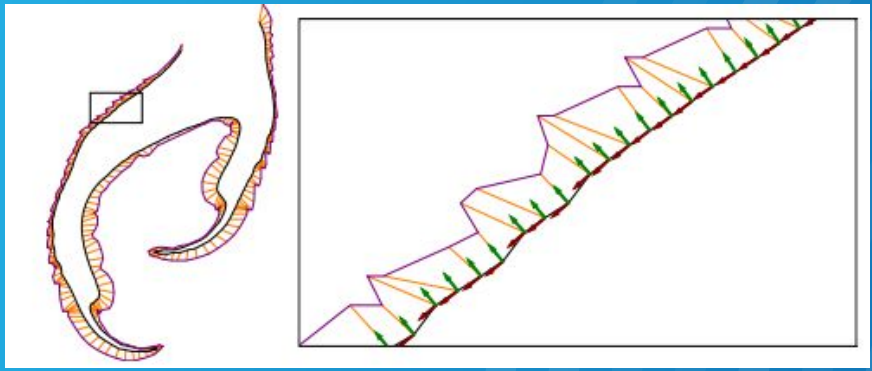
6.

Local Current Coordinate System

$C_i = [t'_i \ n'_i \ b'_i \ s'_i]$

7. Key Idea

$d_i = C_i v_i$



7. Apply delta