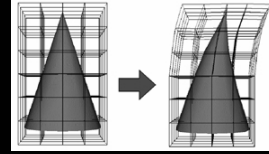


Light Seminar: Trends in Shape Editing and Deformation

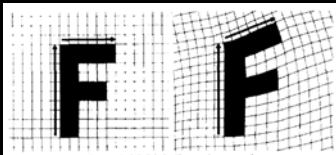
Prof. Doug DeCarlo
Spring 2008

Volumetric deformations



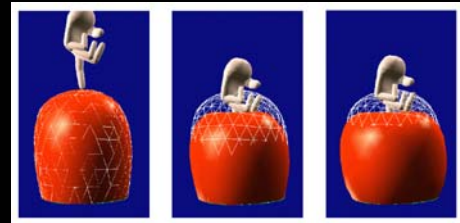
[Sederberg and Parry, "Free form deformation...", SIGGRAPH 1986]

Image morphing



[Beier and Neely, "Feature-based Image Metamorphosis", SIGGRAPH 1992]

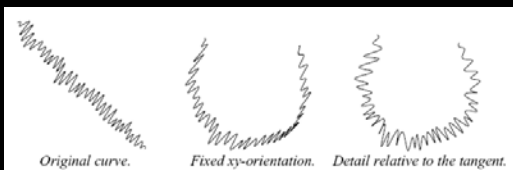
Physical simulation



[James and Pai, "ARTDEFO: Accurate Real Time Deformable Objects", SIGGRAPH 1999]

[Metaxas and Terzopoulos, "Dynamic Deformation of Solid Primitives with Constraints", SIGGRAPH 1992]

Shape and detail



[Finkelstein and Salesin, "Multiresolution curves", SIGGRAPH 1994]

Skeletal/articulated deformations



Pose-space deformation

Skeletal subspace deformation

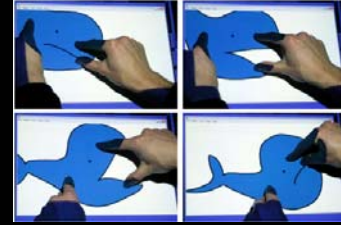
[Lewis et al., "Pose space deformation: ...", SIGGRAPH 2000]

As-rigid-as-possible



[Alexa et al., "As-rigid-as-possible shape interpolation", SIGGRAPH 2000]

As-rigid-as-possible



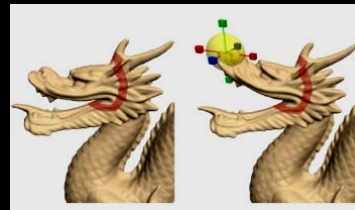
[Igarashi et al., "As-rigid-as-possible shape manipulation", SIGGRAPH 2005]

As-rigid-as-possible



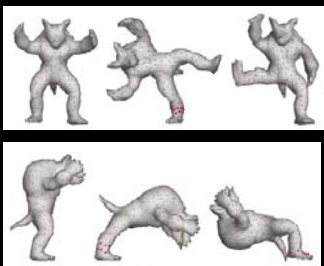
[Schaefer et al., "Image deformation using moving least squares", SIGGRAPH 2006]

Laplacian editing



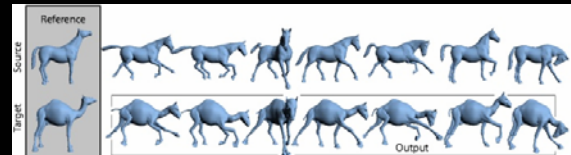
[Sorkine et al., "Laplacian Surface Editing", SGP 2004]

Laplacian editing



[Sorkine et al., "As-Rigid-As-Possible Surface Modeling", ESGP 2007]

Deformation Transfer



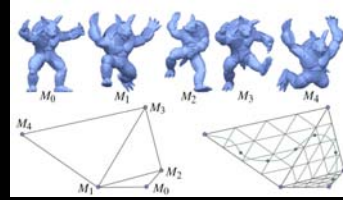
[Sumner and Papovic, "Deformation Transfer for Triangle Meshes", SIGGRAPH 2004]

Mesh assembly



[Sumner and Papovic, "Deformation Transfer for Triangle Meshes", SIGGRAPH 2004]

Generalizations



[Mitra et al., "Geometric Modeling in Shape space", SIGGRAPH 2007]

Sketching



[Kho and Garland, "Sketching mesh deformations", I3D 2005]

Symmetrization



[Mitra et al., "Symmetrization", SIGGRAPH 2007]