Digital Geometry

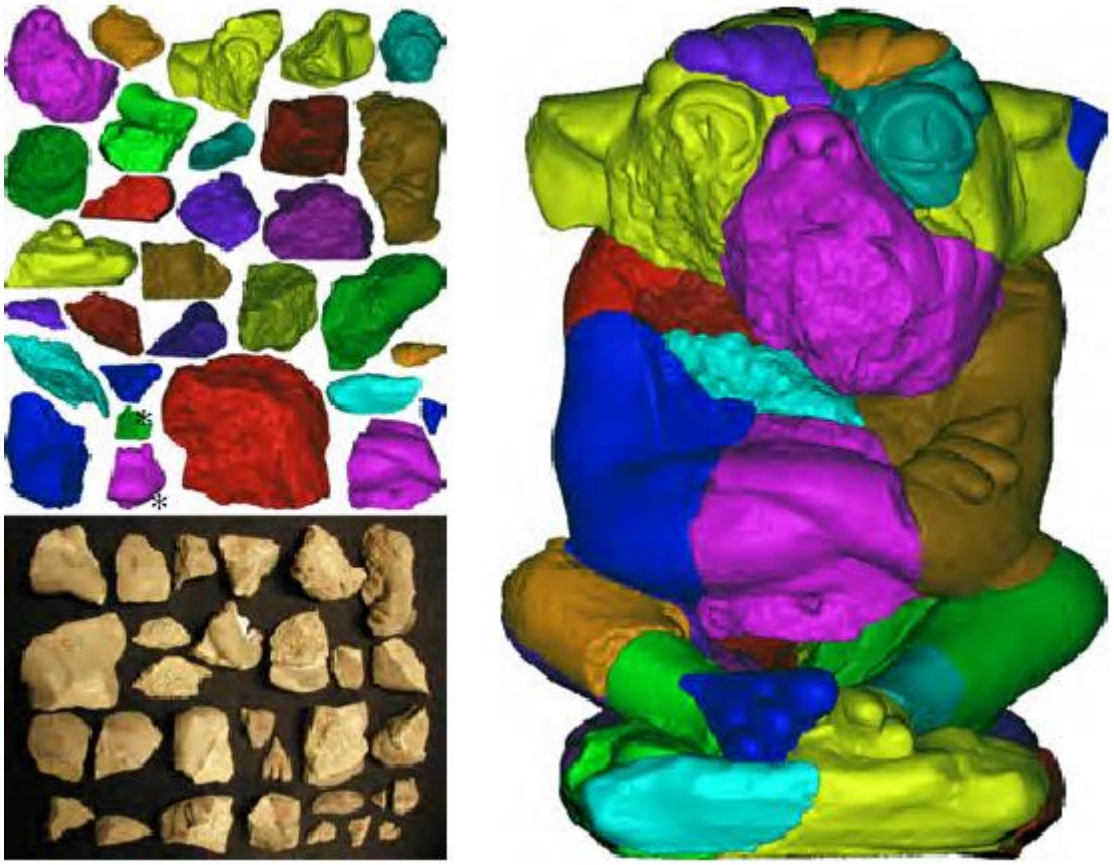
-- applications

JJCAO

Computational archaeology

Eg14_Content-Aware Surface Parameterization for Interactive Restoration of Historical Documents

Tog06_Reassembling Fractured Objects by Geometric Matching



Reassembling a gargoyle statue: photo (bottom left) and 3D models (top left) of the fragments, final assembly (right).

Multi-View Stereo

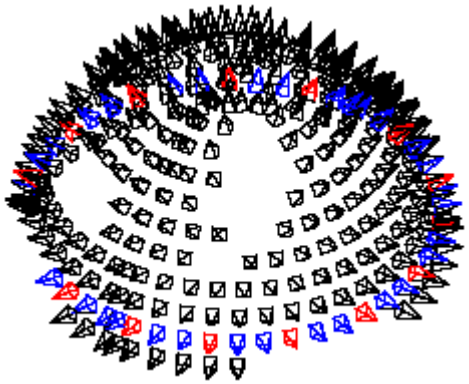
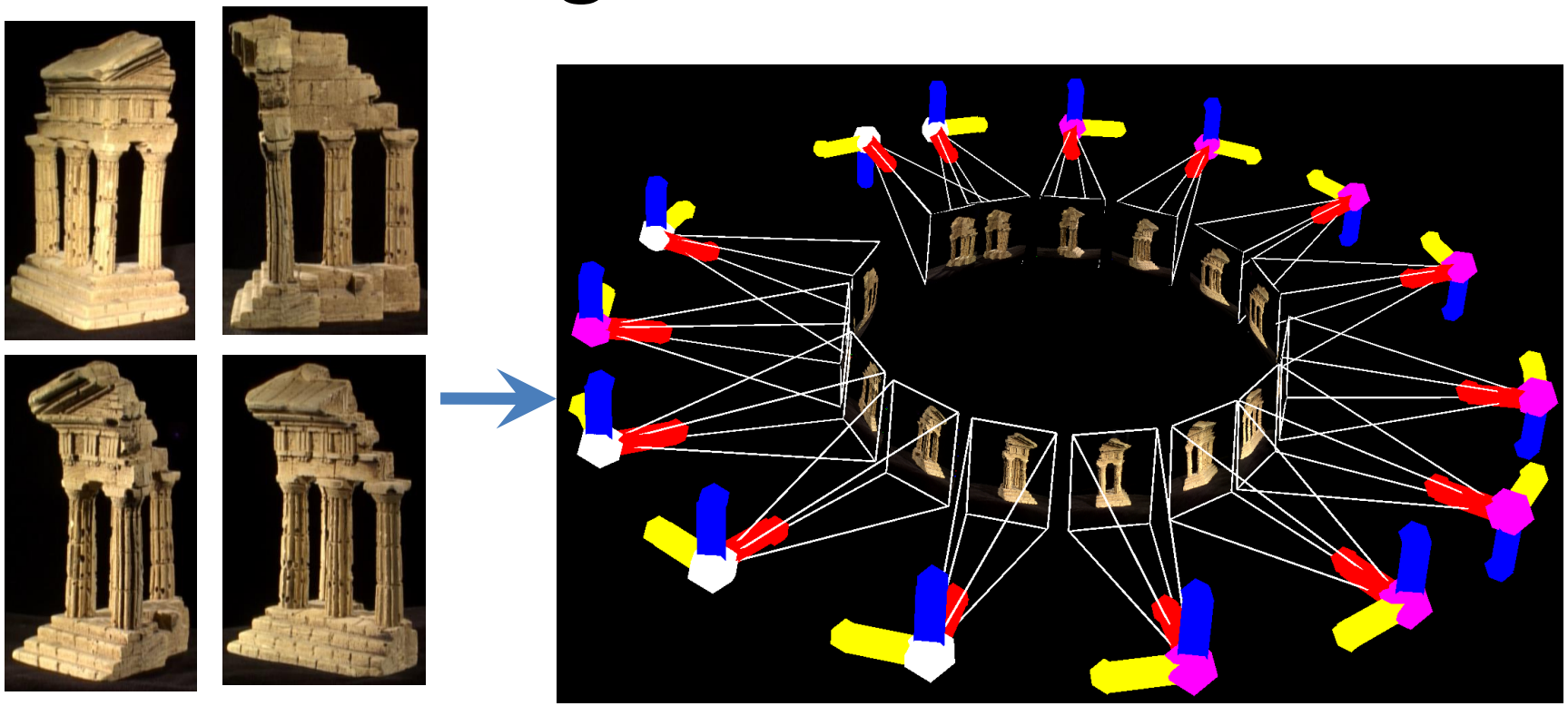
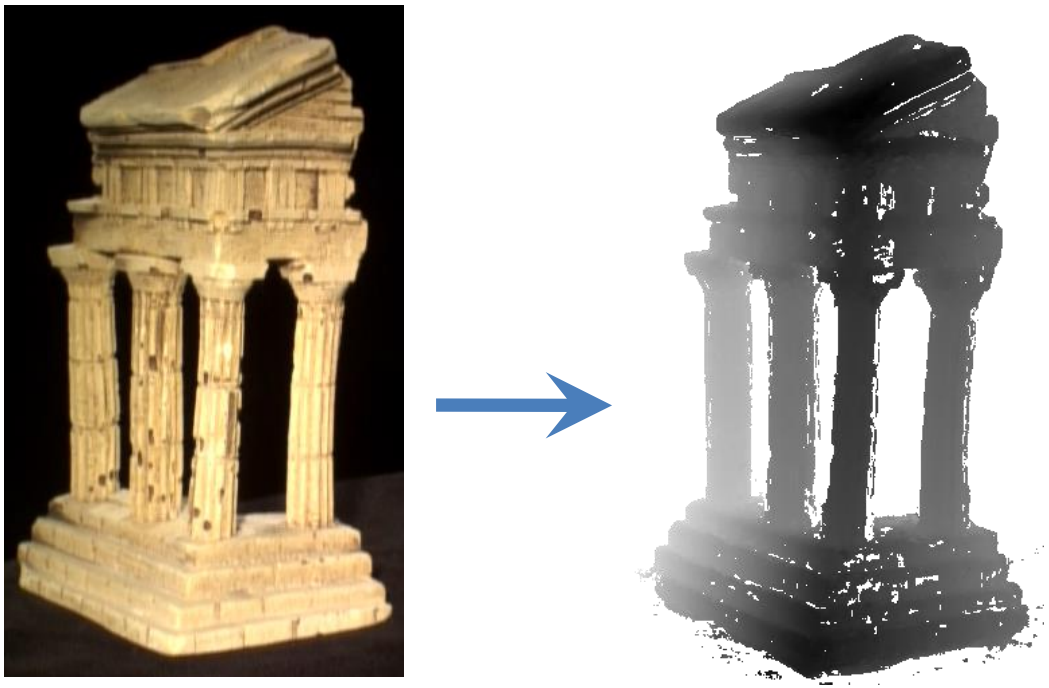


Image Calibration



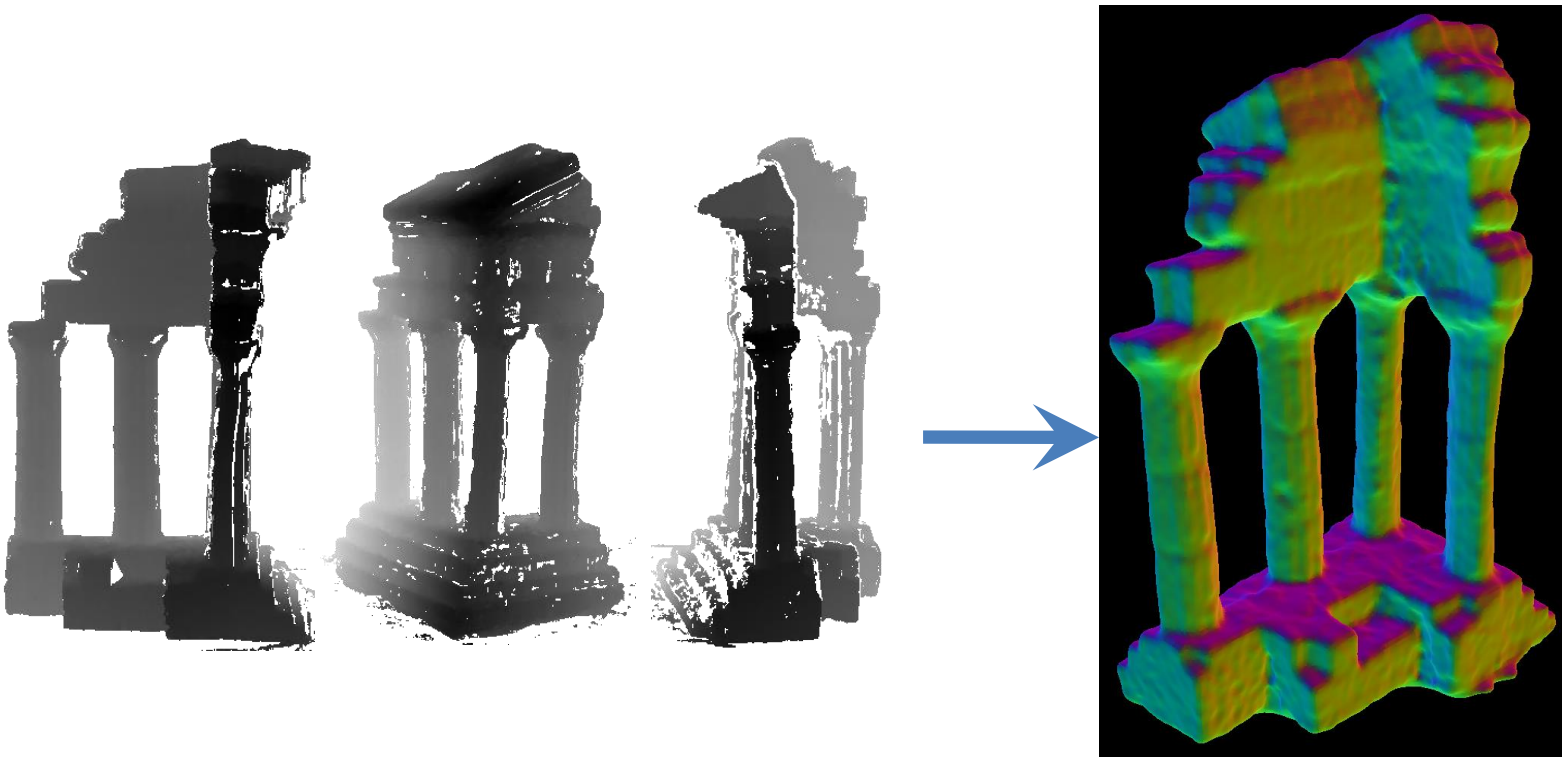
- Input: set of pictures
- Output: camera position, orientation, intrinsic parameters (focal length, optical center)

Depth Map Construction



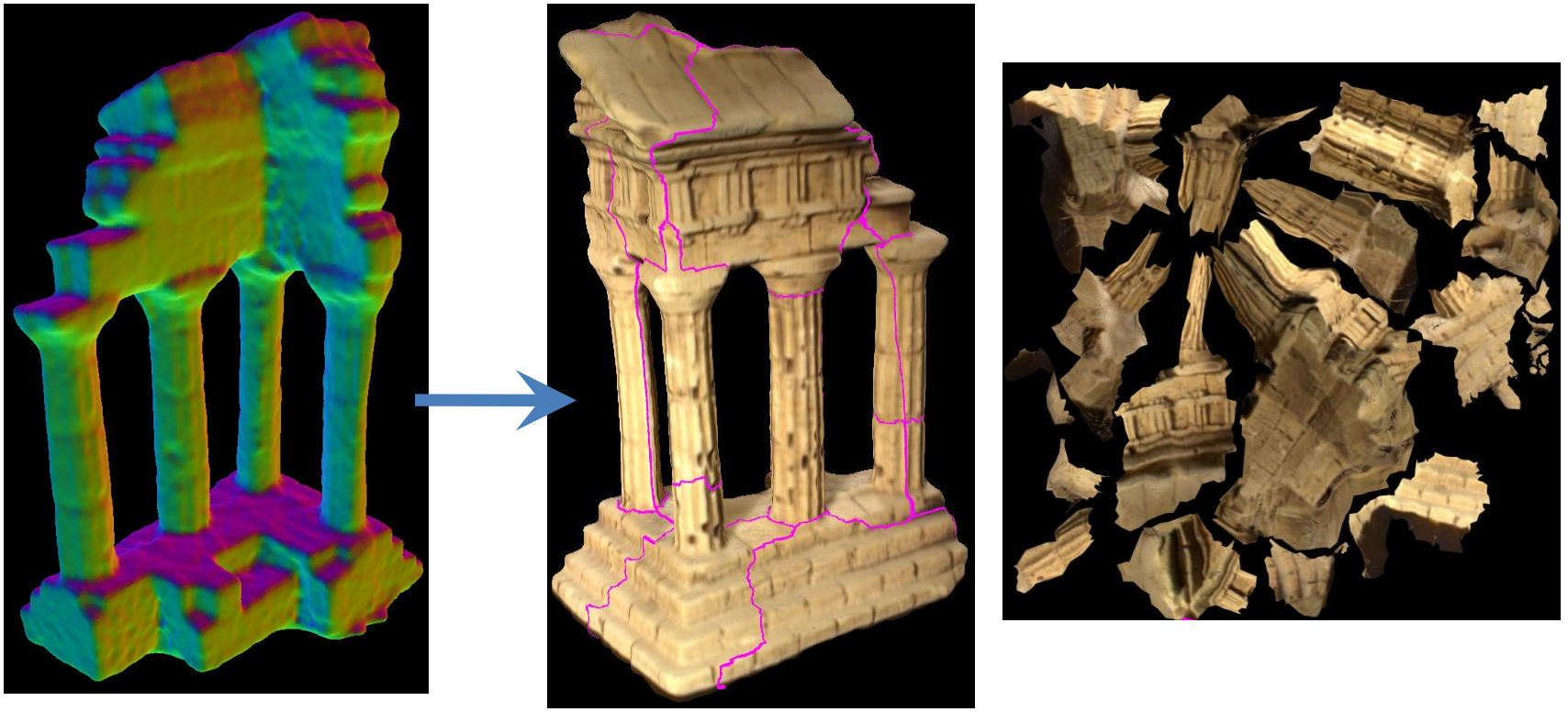
- Input: set of calibrated images
- Output: distance to object for each pixel in the image

Mesh Reconstruction



- Input: set of calibrated images & depth maps
- Output: mesh of object

Texture Generation



- Input: set of calibrated images and mesh of object
- Output: atlas and texture

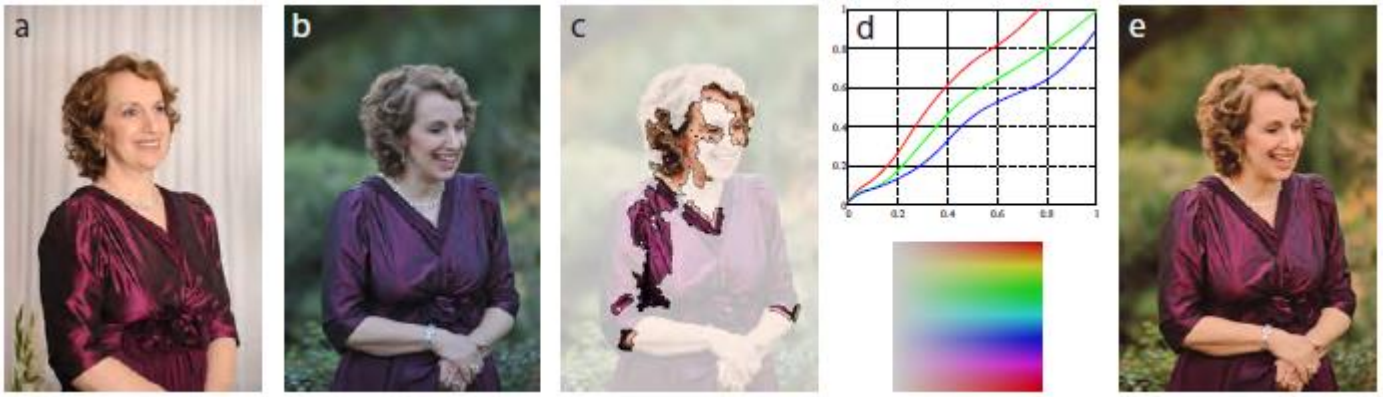
Computational aesthetics

Sig06_Color Harmonization

- Harmonic colors are sets of colors that are aesthetically pleasing in terms of human visual perception.

- In this paper, we present a method that enhances the harmony among the colors of a given photograph or of a general image, while remaining faithful, as much as possible, to the original colors.

Color transfer

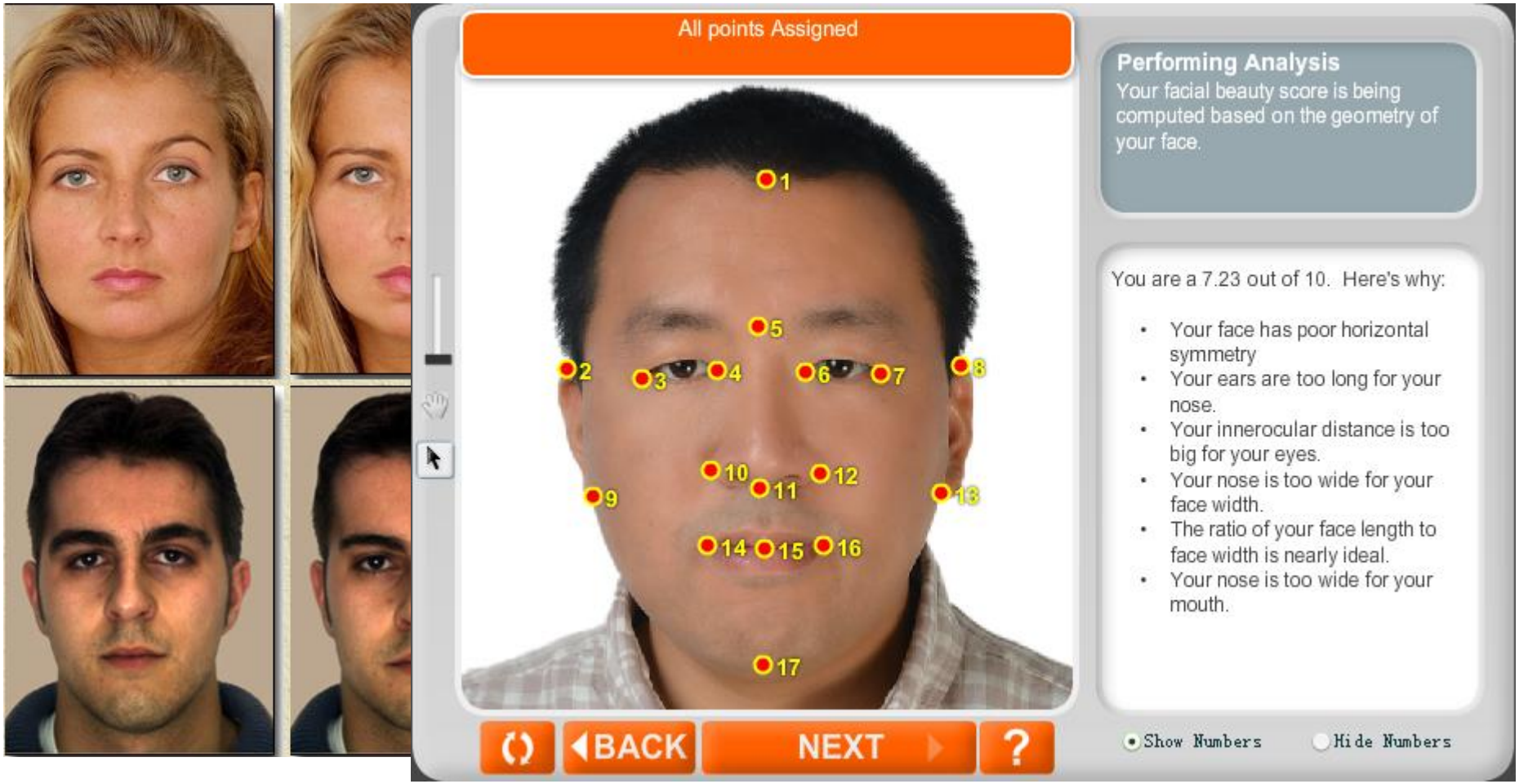


Sig11_Non-Rigid Dense Correspondence with Applications for Image Enhancement

(a) Source Image (b) Target Image (c) Our Result (d) [PR11] (e) [PKD07] (f) [XM09]

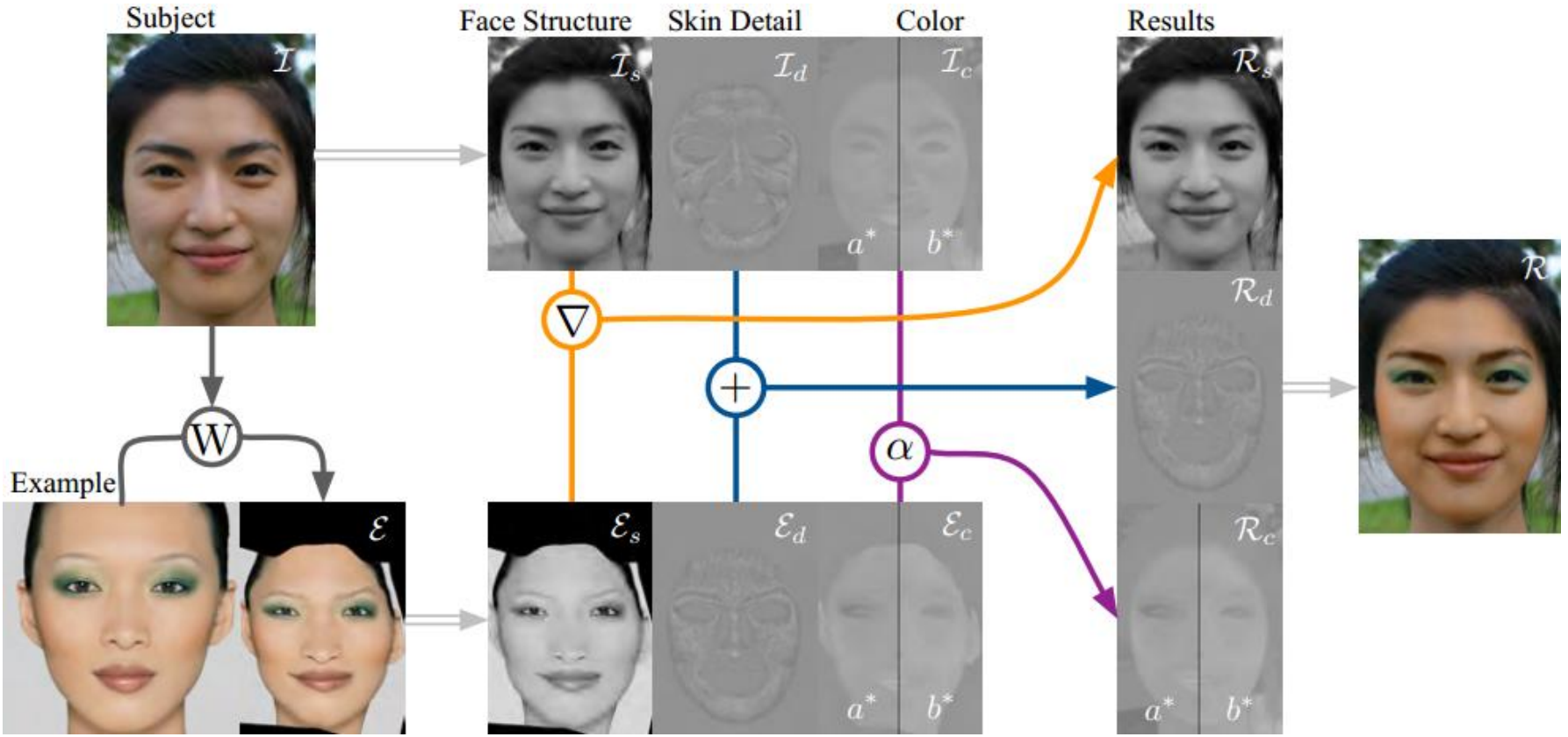
cgf13_Content-Based Colour Transfer

Sig08_Data-Driven Enhancement of Facial Attractiveness



- [Facial Beauty Analysis - Score Your Face]

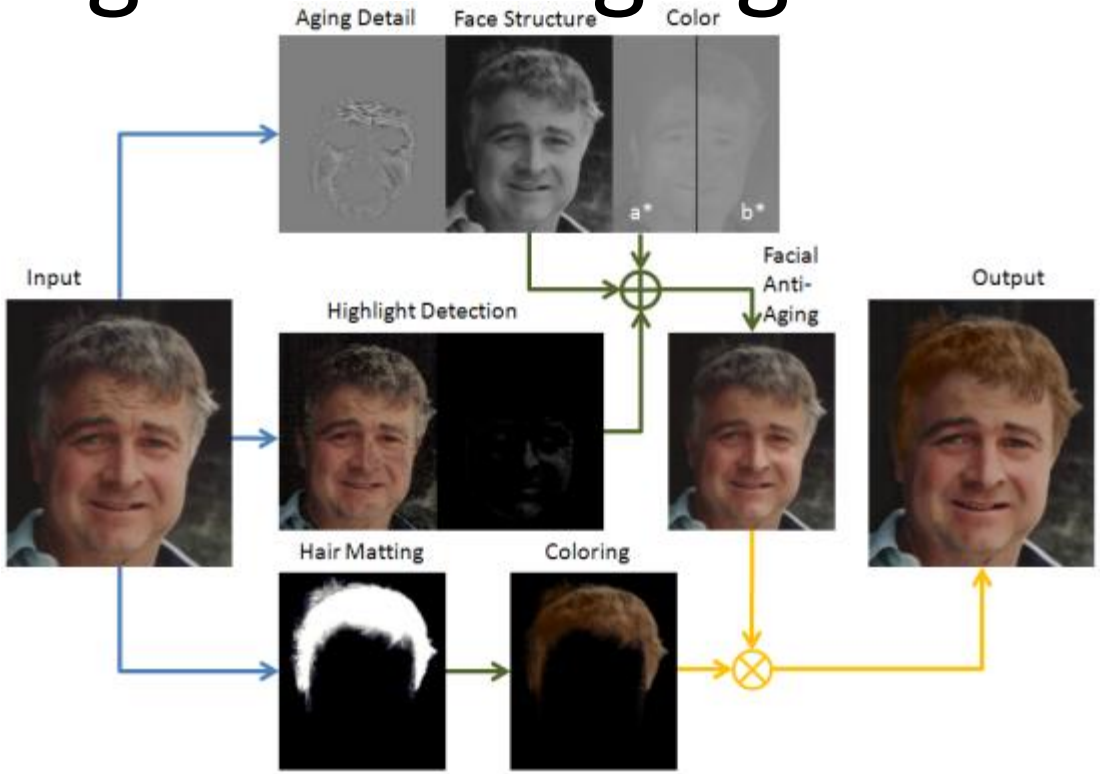
cvpr09_Digital Face Makeup by Example



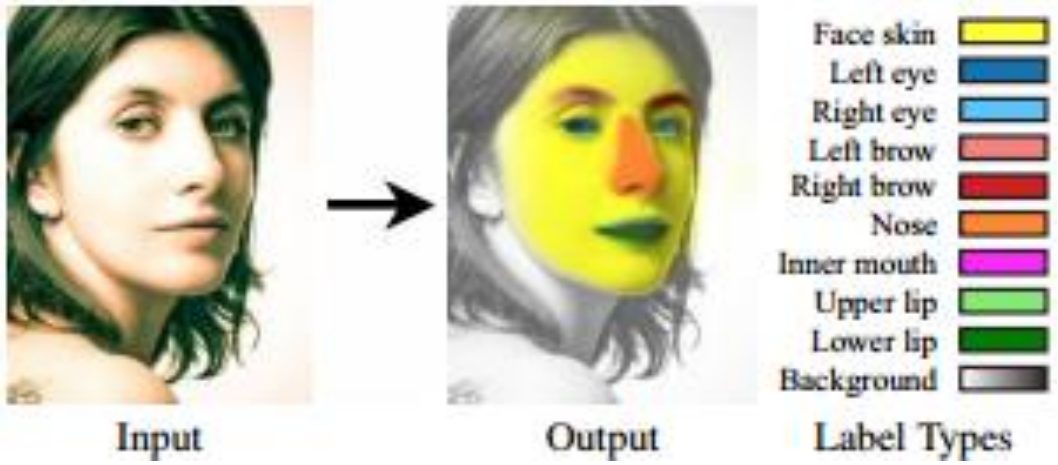
Isvc09_Adaptive Digital Makeup

Output of the fuzzy based skin segmentation

Iccv11_Digital anti-aging in face images



Cvpr13_Exemplar-Based Face Parsing



Tog11_
A Framework for content-adaptive photo manipulation macros: Application to face, landscape, and global manipulations

a framework for generating content-adaptive macros that can transfer complex photo manipulations to new target images

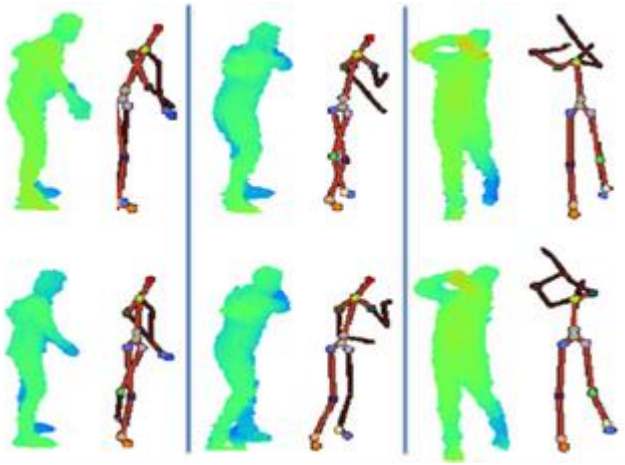
Siga10_A Practical Appearance Model for Dynamic Facial Color

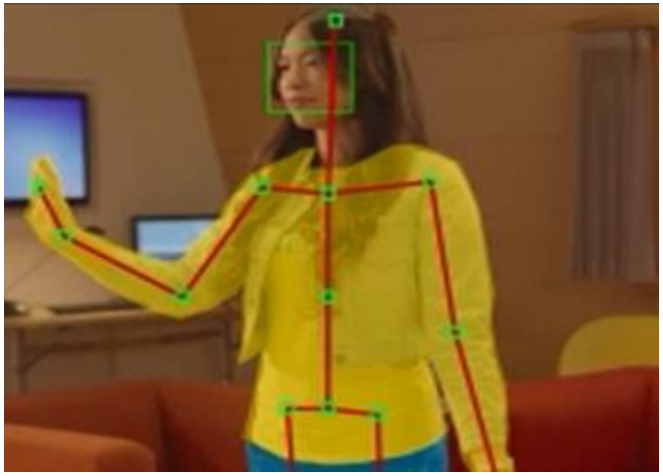
More references

- Facial Makeup Detection Using HSV Color Space and Texture Analysis, thesis 2012.
- Icip13_AN AUTOMATIC FRAMEWORK FOR EXAMPLE-BASED VIRTUAL MAKEUP
- Tip13_Face Illumination Manipulation Using a Single Reference Image by Adaptive Layer Decomposition
- Casa13_Physically based cosmetic rendering
- Smc13_Facial Skin Beautification Using Region-Aware Mask
- Tis13_A New Face Relighting Method Based on Edge-Preserving Filter
- Eg11_Computer-Suggested Facial Makeup
- Tvcg12_Enhancing the Symmetry and Proportion of 3D Face Geometry
- TOMCCAP13_Towards decrypting attractiveness via multi-modality cues
- IJCSE13_Human Age Prediction and Classification Using Facial Image
- Makeup Transfer Using Multi-Example
- Eye color classification for makeup improvement

Other

Cvpr12_Exemplar-Based Human Action Pose Correction and Tagging

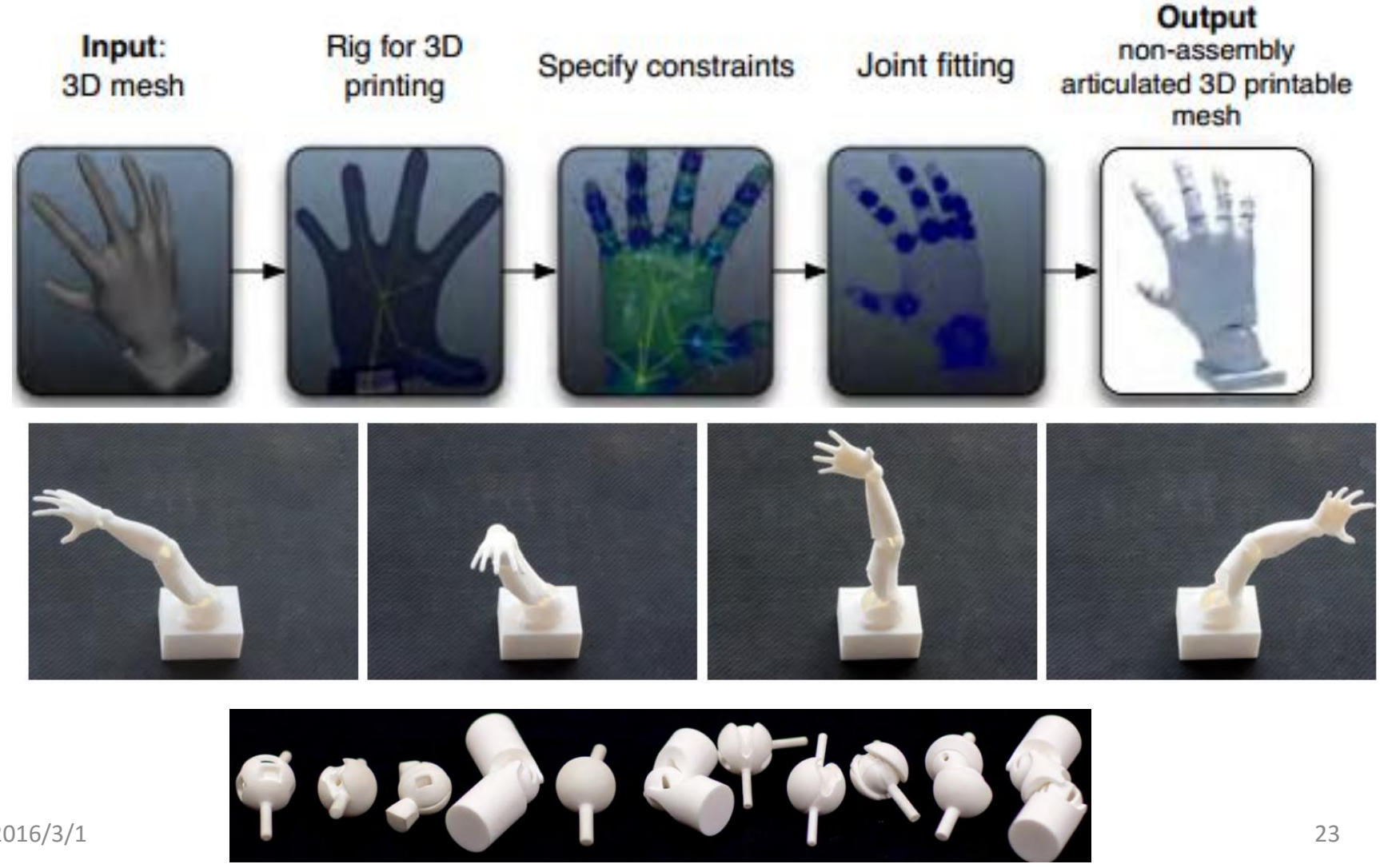




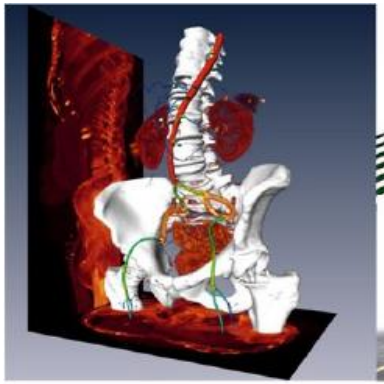
ic11_Kinect Identity: Technology and Experience

Image Compositing

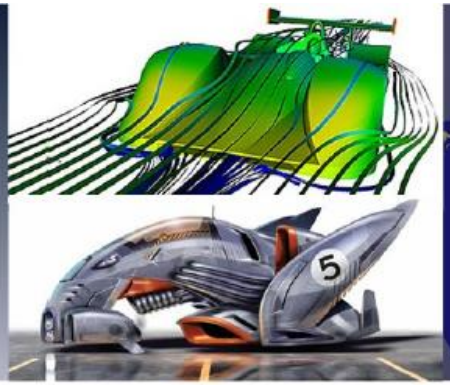
Siga12_3D-Printing of Non-Assembly, Articulated Models



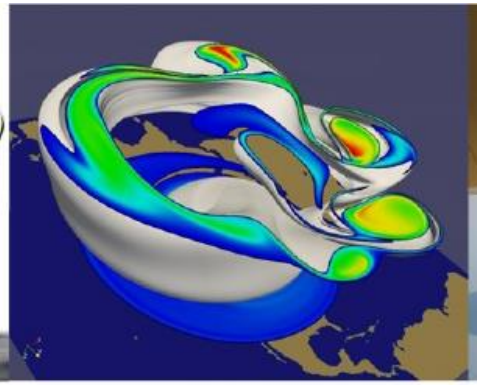
Applications



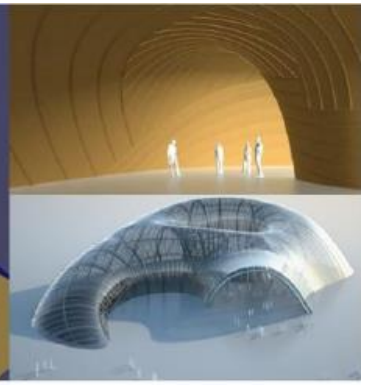
(a)数字医疗



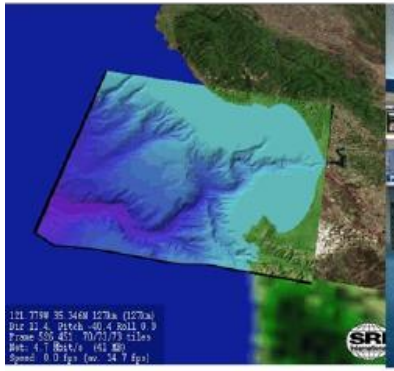
(b)汽车设计



(c) 大气模拟



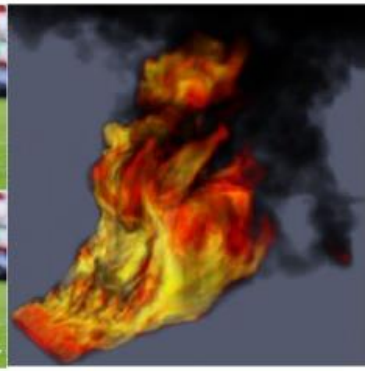
(d)建筑设计



(e)地形分析

(f)虚拟现实

(g)影视娱乐



(h)虚拟科学实验

Online applications

- Webcam Social Shopper: the virtual dressing room