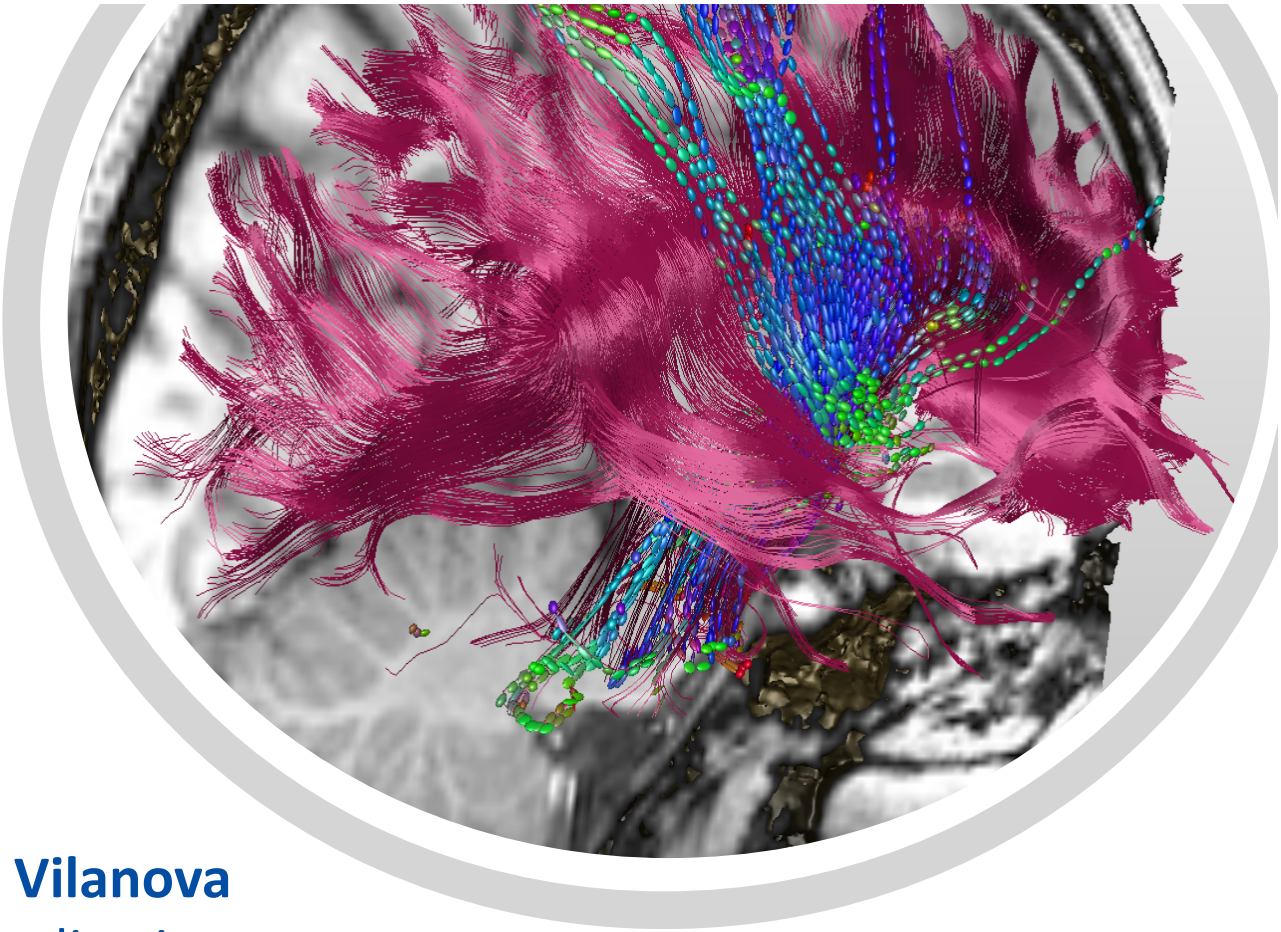


Medical Visualization and Analysis

DMT- TUDelft **Anna Vilanova**

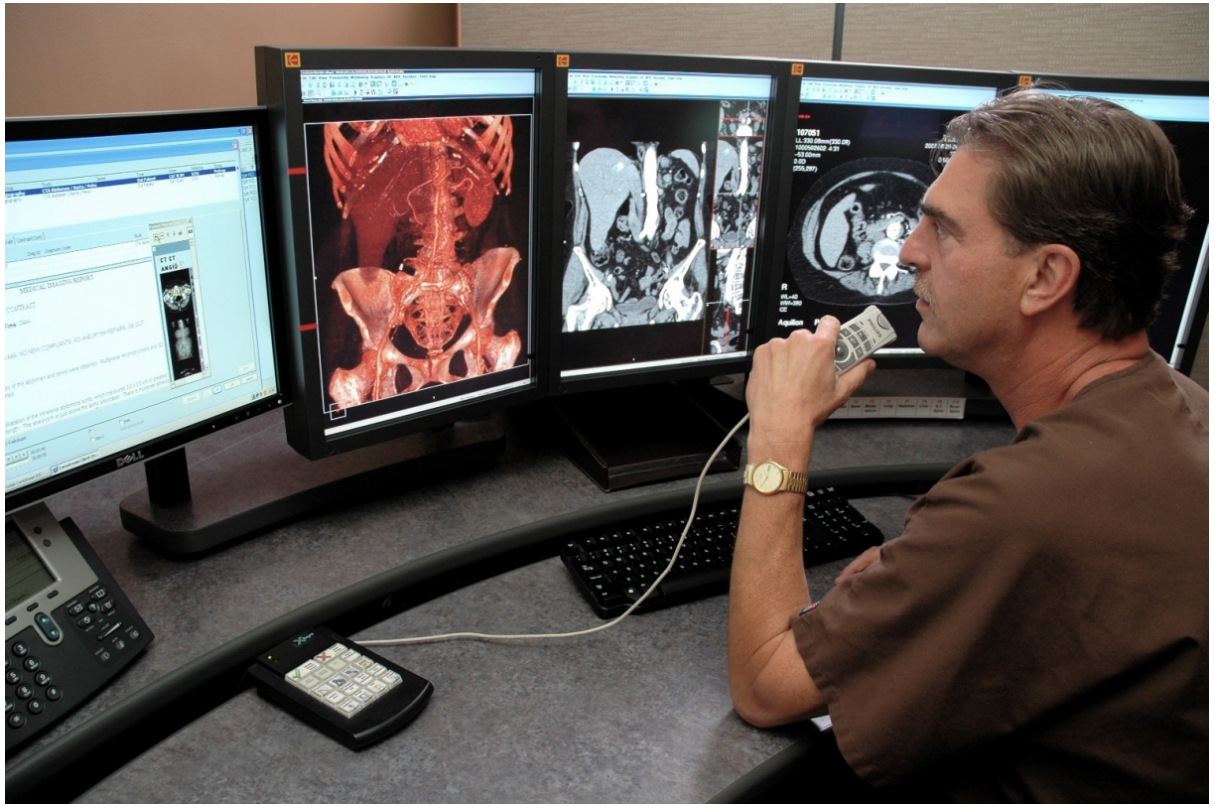
Computer Graphics & Visualization

https://graphics.tudelft.nl/

Intelligent Systems Department

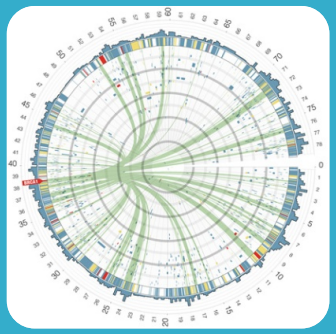
INSY - http://cs.tudelft.nl/

Medicine: Decision Making-Complex information

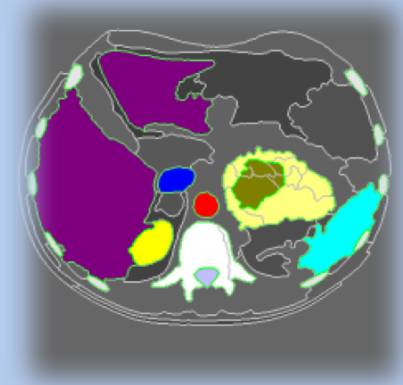


Computer Graphics

Visualization

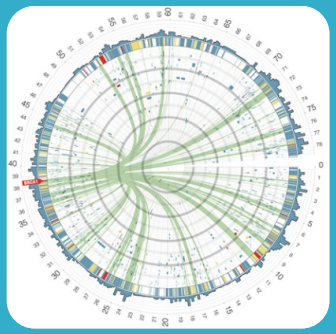


Medical Image Analysis



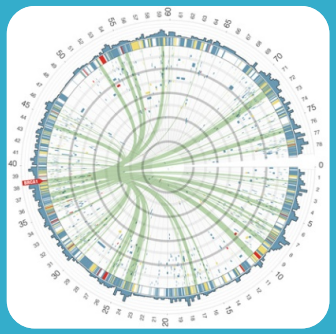
Computer Graphics

Visualization

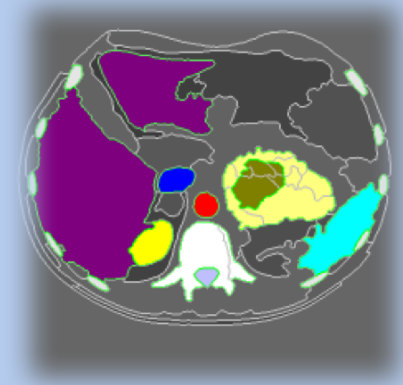


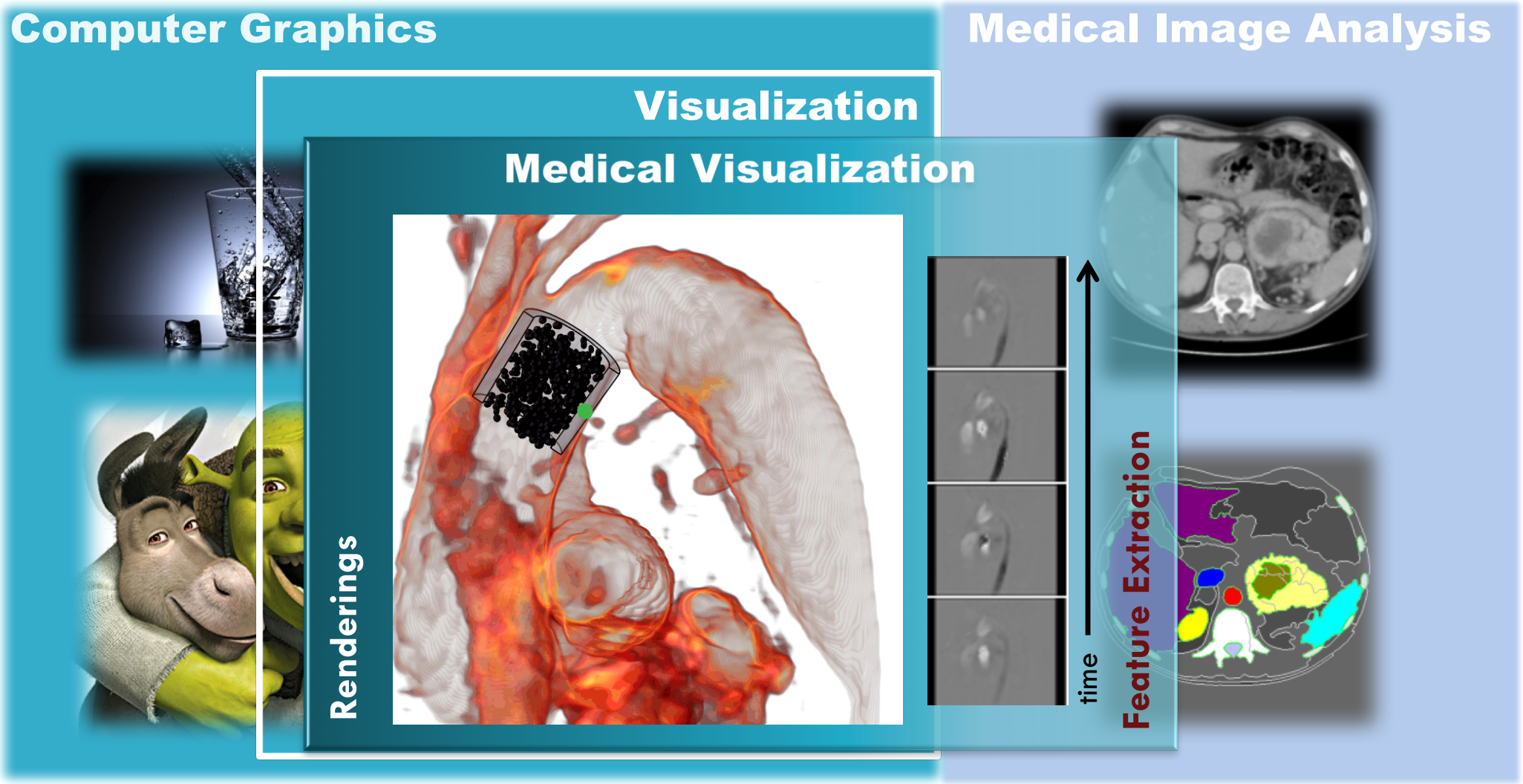
Computer Graphics

Visualization



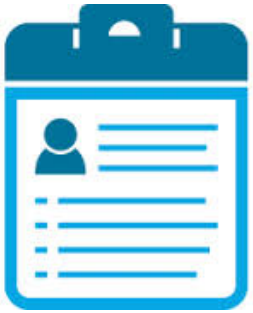
Medical Image Analysis

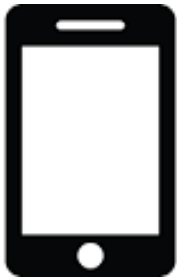


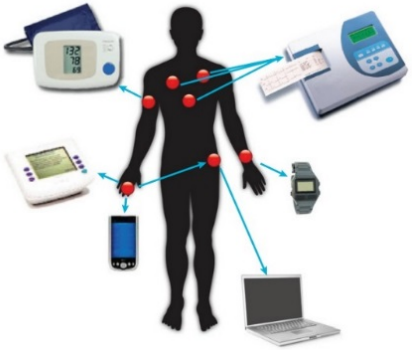

Computer Graphics
Medical Image Analysis
Visualization
Medical Visualization
Renderings
time
Feature Extraction

Data collection …

…







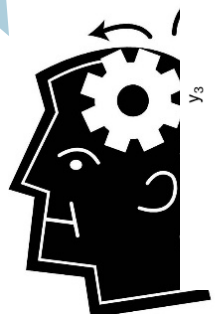
Data Analysis

Get new insight

TU Delft

Data Visualizations - Visual Analytics

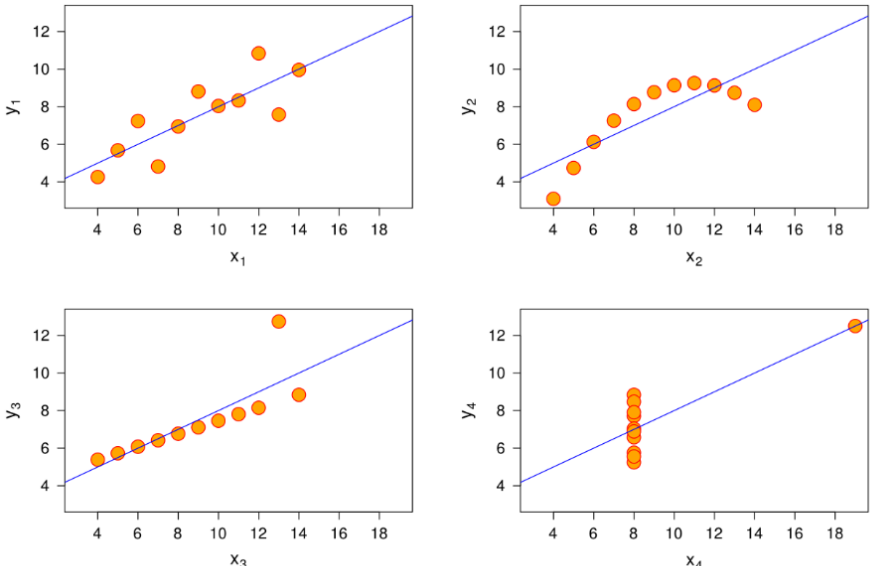
Visualiza



Data Analysis

Machine learning

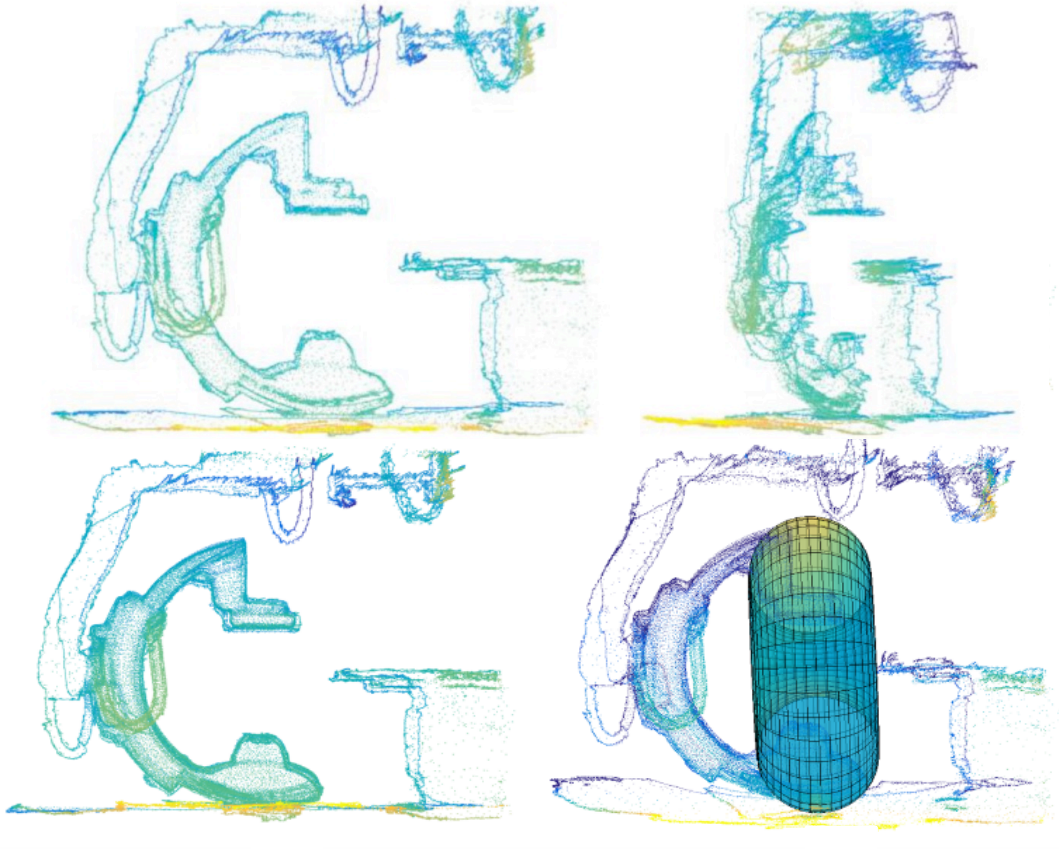
Pattern Recognition



Identical statistics	
x mean	9.0
x variance	10.0
y mean	7.50
y variance	3.75
x/y correlation	0.816

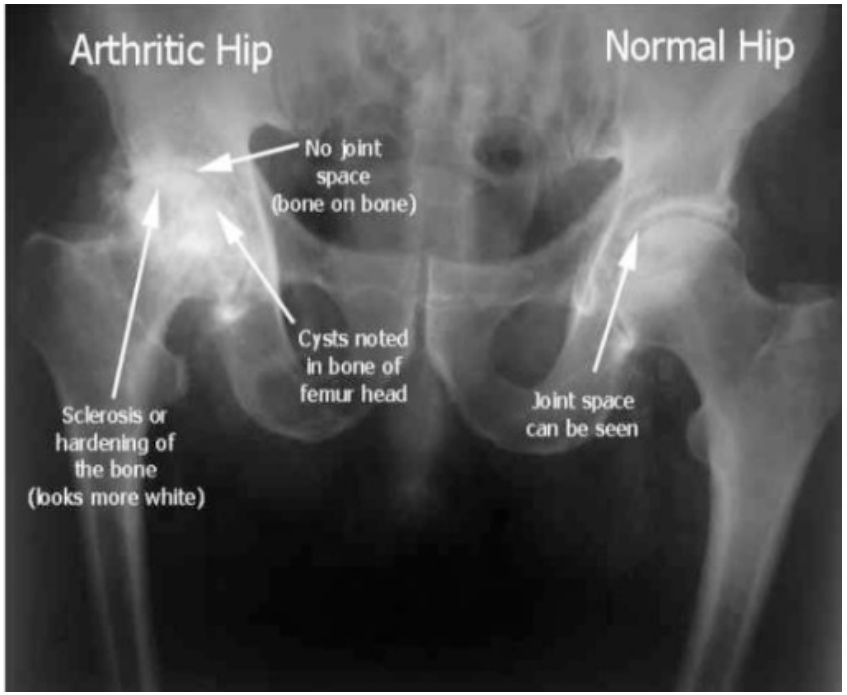
Collision Avoidance for Predefined C-arm Trajectory using 3D Depth Measurements

Shakir Khan 2016



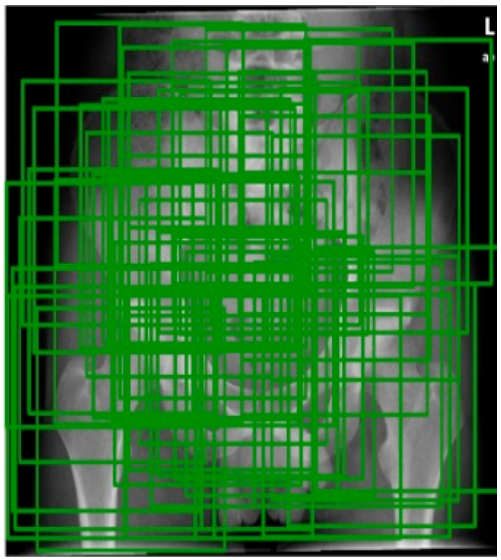
Supervised Learning for Measuring Hip Joint Distance in Digital X-Ray Images

Panchamy Krishnan Krishnakumari 2015



Supervised Learning for Measuring Hip Joint Distance in Digital X-Ray Images

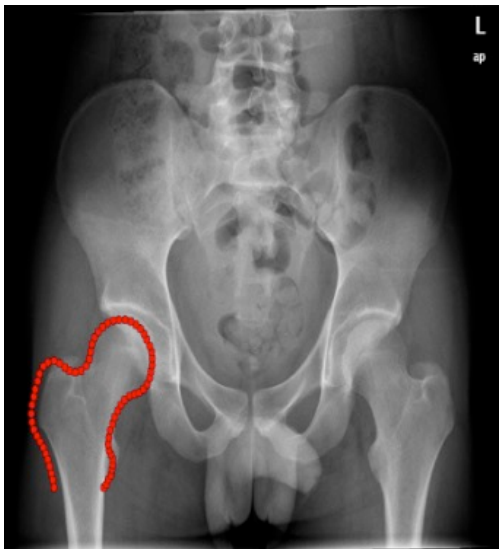
Panchamy Krishnan Krishnakumari 2015



Patches

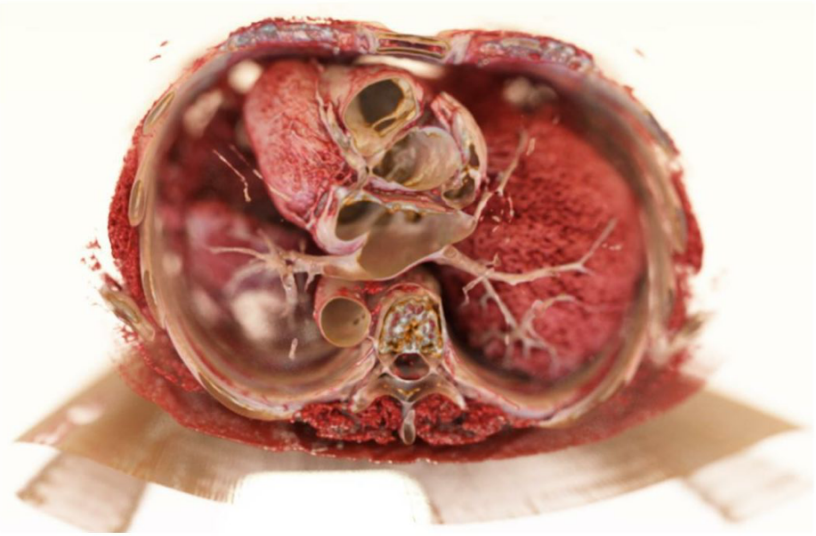
Positions voted by patches

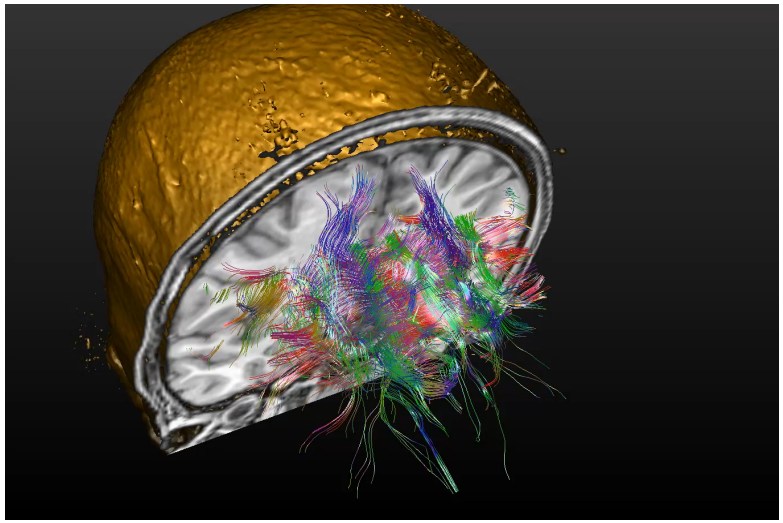
Response image for lach landmark



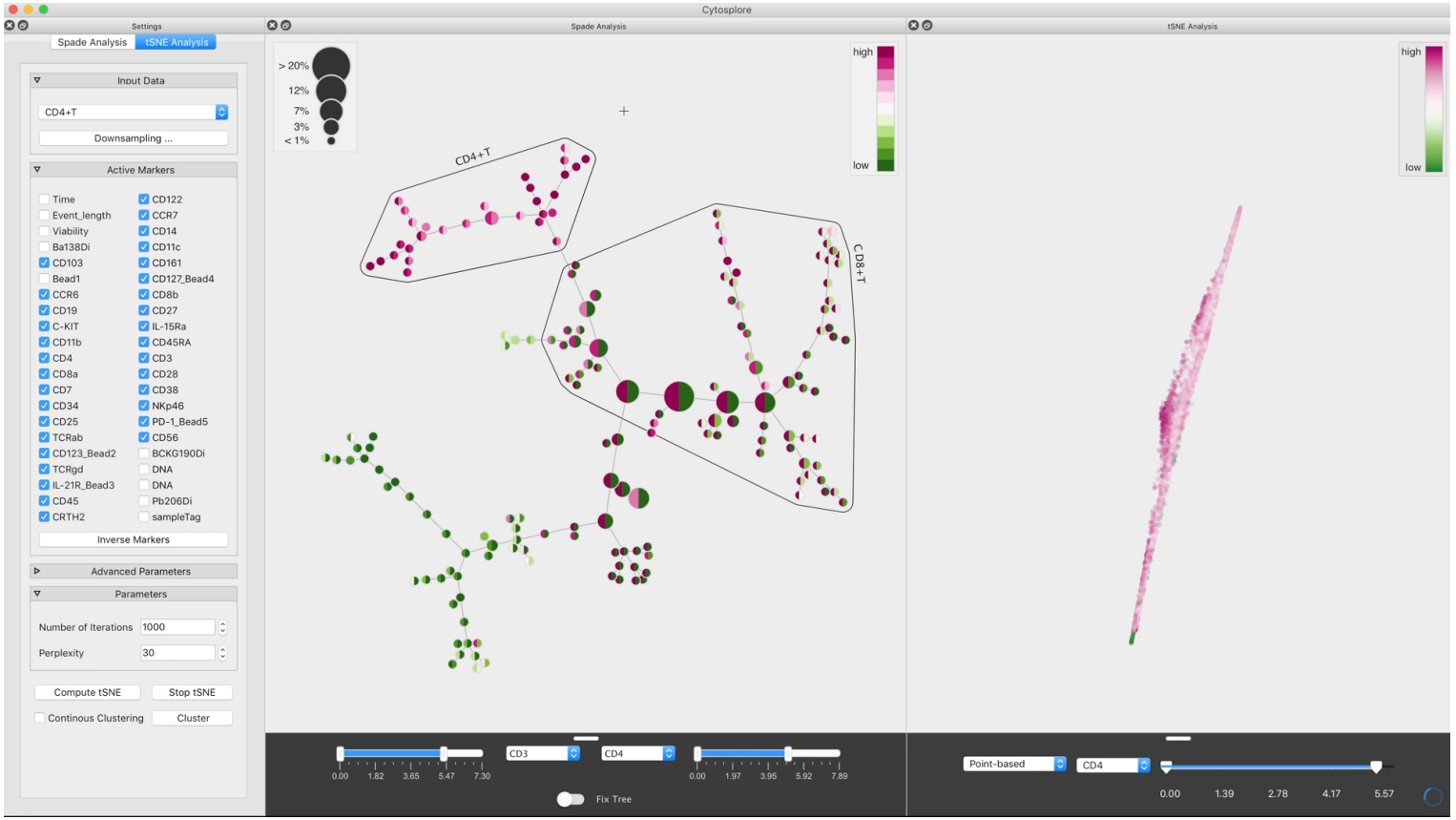
Initial land mark results

Collaborations



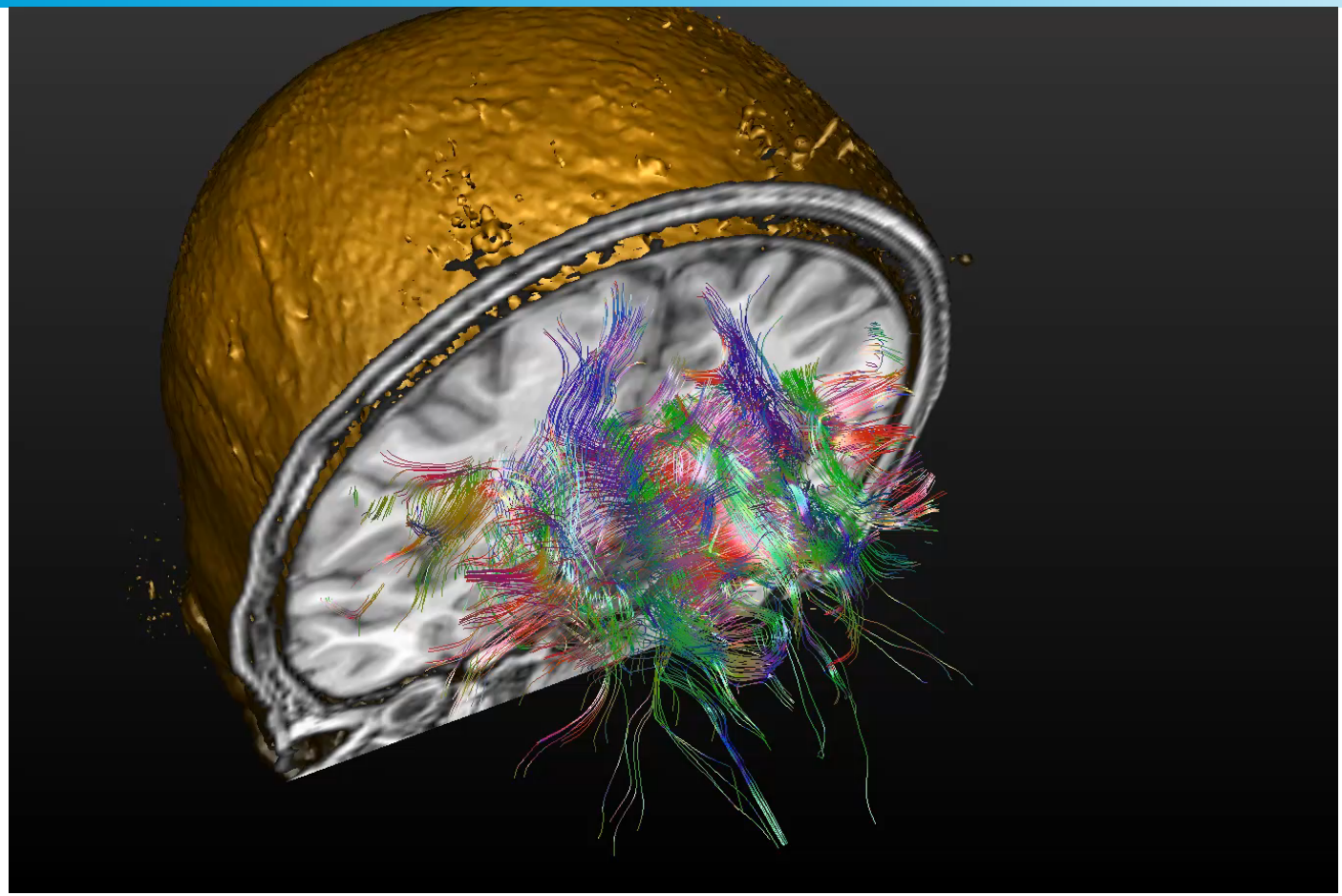


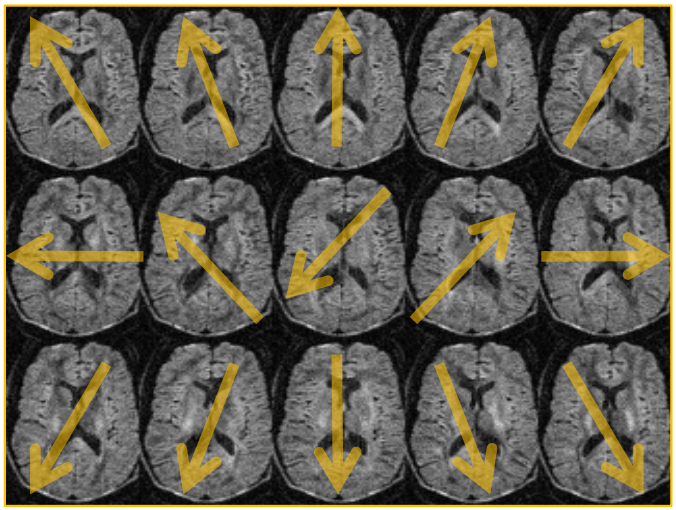
Cytosplore: Interactive Immune Cell Phenotyping for Large Single-Cell Datasets



EuroVis 2016: T. Höllt[1], N. Pezzotti[1], V. van Unen[2], F. Koning[2], E. Eisemann[1], B. Lelieveldt[1;2], and A. Vilanova[1]

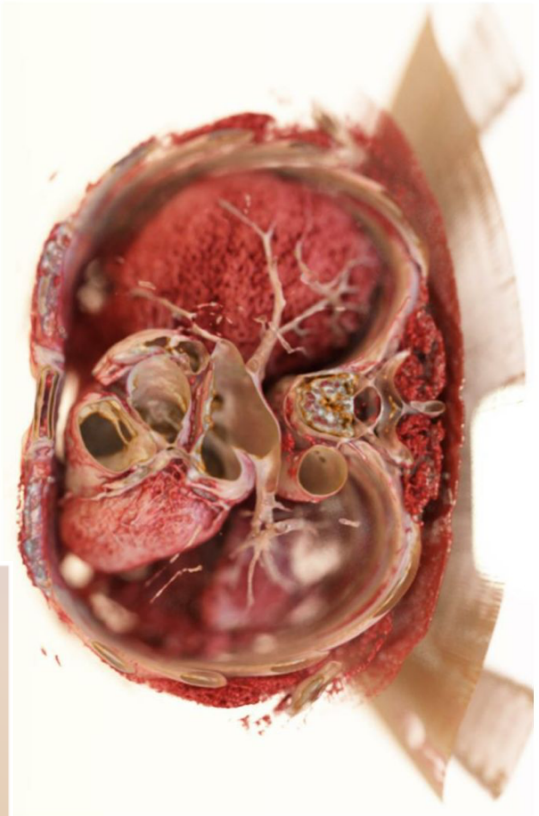
Brain Connectivity

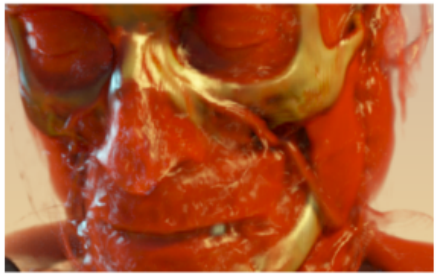


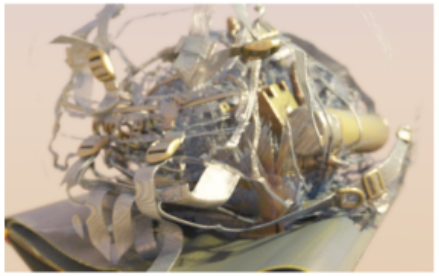


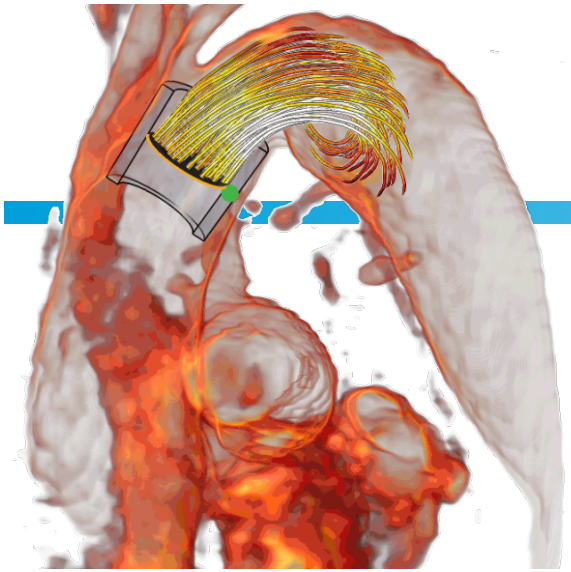
Exposure Render

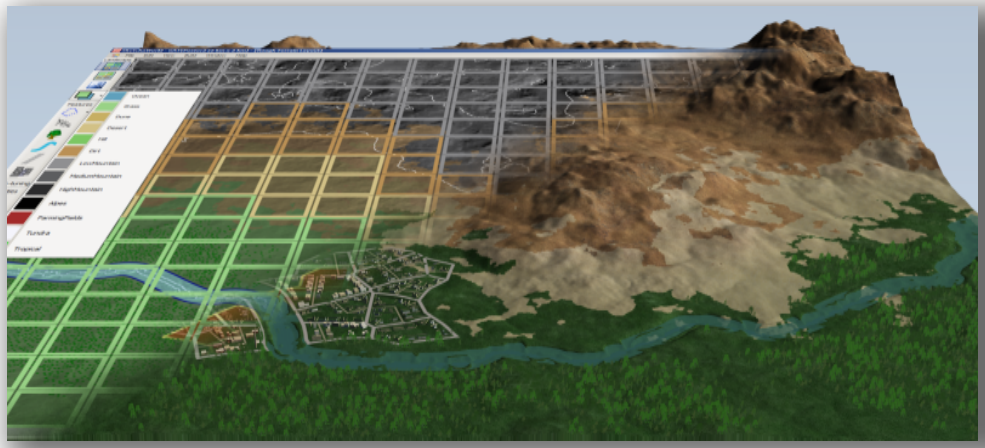
- Large-scale realistic volume rendering
  - Display of large-scale volumetric data (e.g., CT)
  - Global illumination computations
  - Support of complex materials
  - GPU ray-tracing











Master Projects Available

graphics.tudelft.nl (and follow education)

or directly

https://graphics.tudelft.nl/student-projects/

TU Delft