Assignment 2

Interactive Data Visualization

SS 20

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PADERBORN UNIVERSITY
Computergraphics, Visualization & Image Processing

Topics:

2D Spatial Data, Histogram, Transfer Function, Filter

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Assignment 2

Given dataset:

- One slice of a CT angiographic scan: slice150.raw
- Description: TermsOfUse_slice150.txt and DataCharacteristics_slice150.txt

```
This data set corresponds to the 150th slice of a volume data set.
The dimension is 512 x 512 x 1.

The volume data set is a CT-angiographic scan of a human heart.
Data is given as a binary array of the dimension 512 x 512 x 421 (xyz).
The extent of one voxel is 0.423828 x 0.423828 x 0.5 millimeters (xyz).
The data value of one entry is a 12-Bit Integer saved in 16-Bit (short).
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The extent of one                                   imeters (xyz).
The data value of                                   16-Bit (short).
```

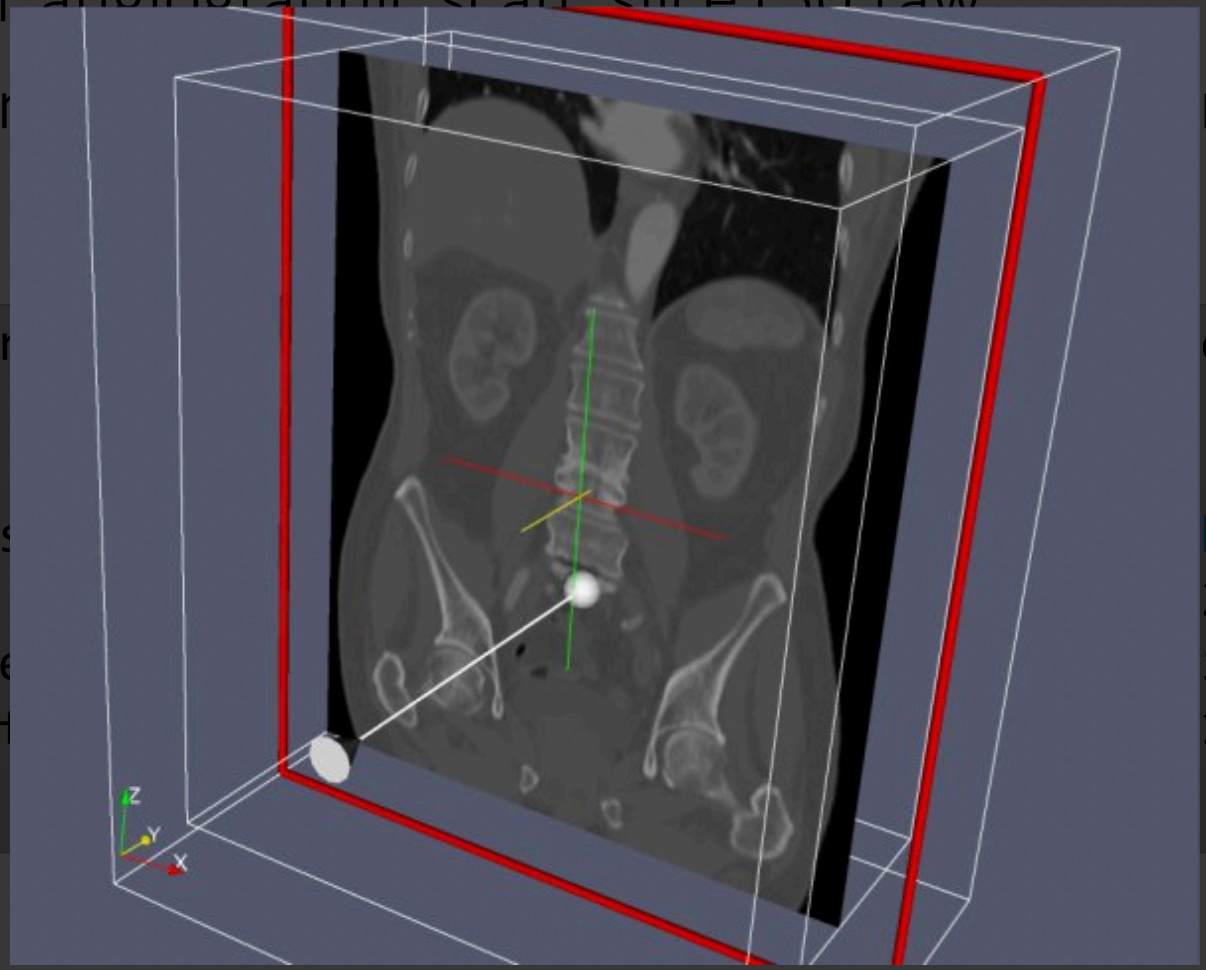

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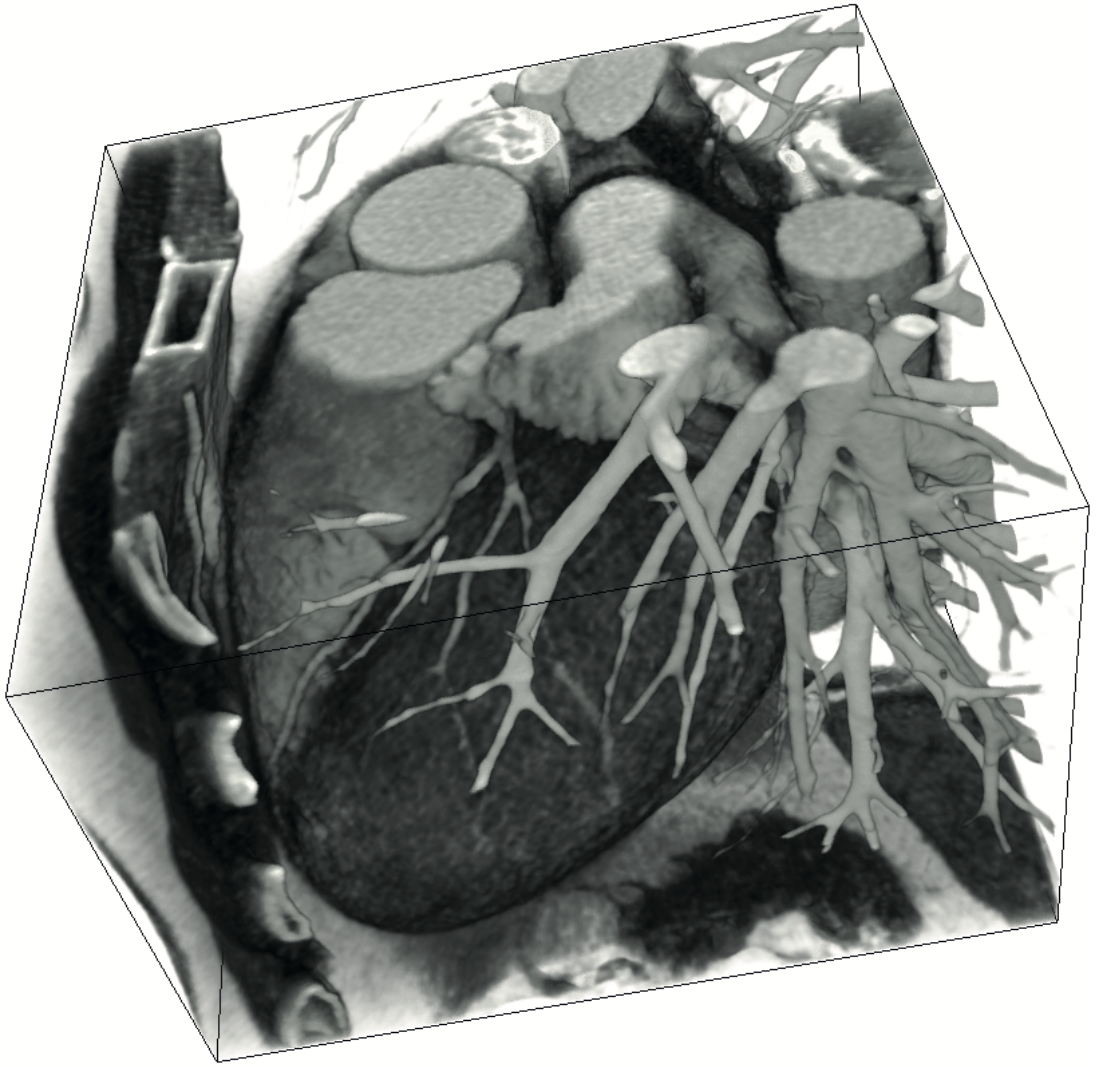

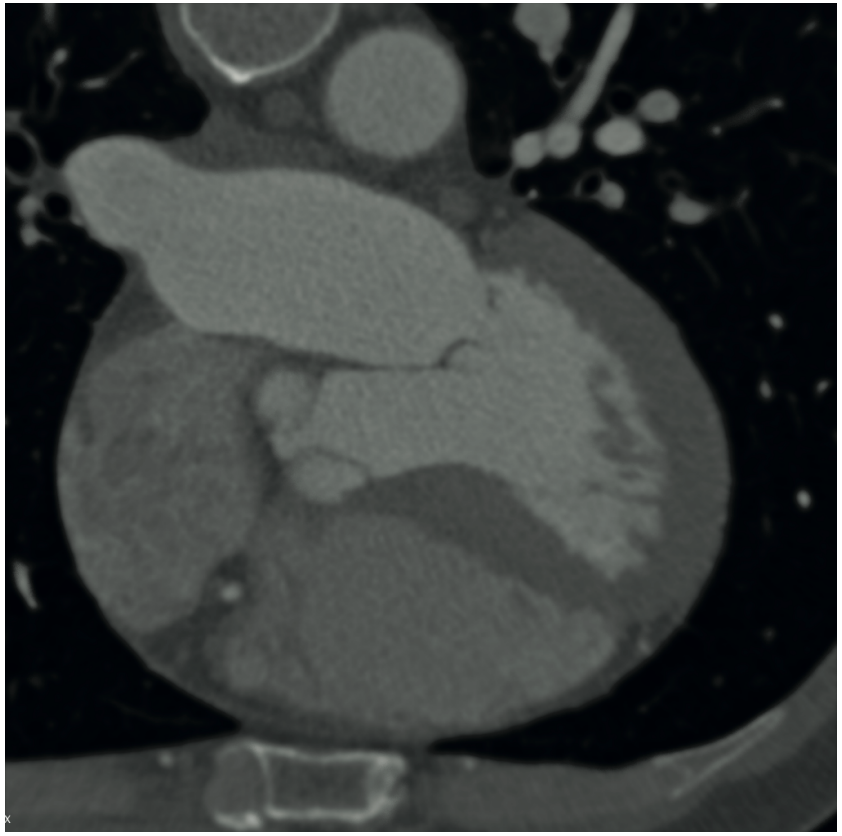

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Tasks:

a) Profile line
b) Mean value and variance value
c) Histogram
d) Linear transformation
e) Different transformation
f) 11x11 boxcar smoothing filter
g) 11x11 median filter

Assignment 2

Tasks and points:

a)	Profile line	[0.5 points]
b)	Mean value and variance value	[0.5 points] → input via PANDA
c)	Histogram	[1 point]
d)	Linear transformation	[1 point]
e)	Different transformation	[1 point]
f)	11x11 boxcar smoothing filter	[3 point]
g)	11x11 median filter	[3 point]

Images – No histogram!

No libraries for calculation!

Assignment 2

Important Rules:

- Screenshots as *.jpg or *.png
- Code incl. comments to make subtasks identifiable

- Draw scales and coordinate axes where necessary

- The points you will receive for this assignment depend upon:
  - Correctness of solution
  - Effectiveness of visual representation
  - Completeness of solution

- *No points for partial solutions! No points when not comply with the rules.*

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