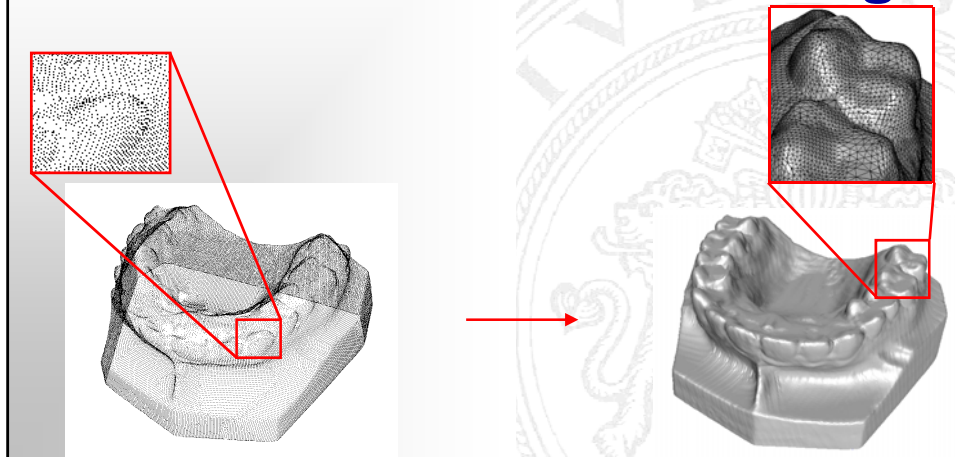
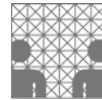


# Seminar

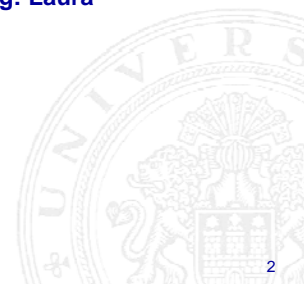
## 3D-Geometrieverarbeitung



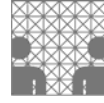
### Übersicht



1. Termin:	15.10.	Organisatorisches, Einführung in die Thematik
2. Termin:	22.10.	Vergabe der Vortragsthemen
3. Termin:	29.10.	Scanner vorführen
4. Termin:	05.11.	3D-Scanner
5. Termin:	12.11.	<b>3D-Druck: Lukas</b>
6. Termin:	19.11.	Voronoi, Delaunay, Alpha-Shapes
7. Termin:	26.11.	<b>Ball-Pivoting: Jonas</b>
8. Termin:	03.12.	Oberflächenrekonstruktion: Refinement Reduction
9. Termin:	10.12.	<b>Oberflächenvereinfachung: Laura</b>
10. Termin:	17.12.	Glätten (Skelette)
11. Termin:	07.01.	<b>Löcher Füllen: Niklas</b>
12. Termin:	14.01.	Film?
13. Termin:	21.01.	<b>Formähnlichkeit: Bente</b>
14. Termin:	28.01.	Abschlussbesprechung



## Seminarthemen

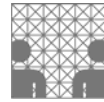


### Themenbereiche:

- **3D-Scan-Methoden:**
  - Structured Light
  - Laser-Scanner
  - MS Photosynth, Bundler
  - Laser Range Finder
  - TOF-Kameras
- **Oberflächenrekonstruktion**
  - Implizite Funktionen
  - Alpha-Shapes
  - Ball-Pivoting
  - Crust
  - Cocone
  - Refinement Reduction



## Seminarthemen

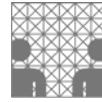


### Themenbereiche:

- **Oberflächenmanipulation**
  - Glättung
  - Löcher füllen
  - Kombination mehrerer Scans
- **Formvergleich**
  - Shape Retrieval

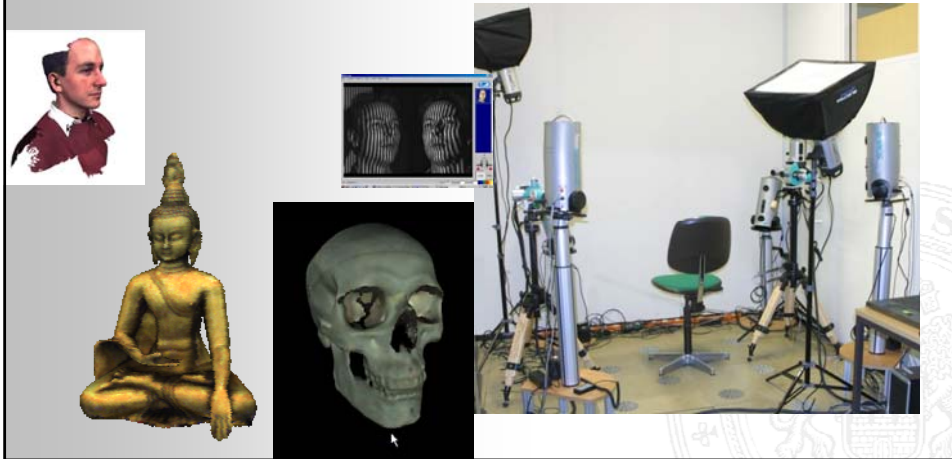


## Seminarthemen

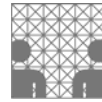


### Structured Light Scanner

[www.breuckmann.com](http://www.breuckmann.com)



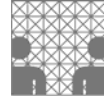
## Seminarthemen



**Laser-Scanner:**  
DAVID-Laserscanner  
NextEngine 3D Scanner



## Seminarthemen

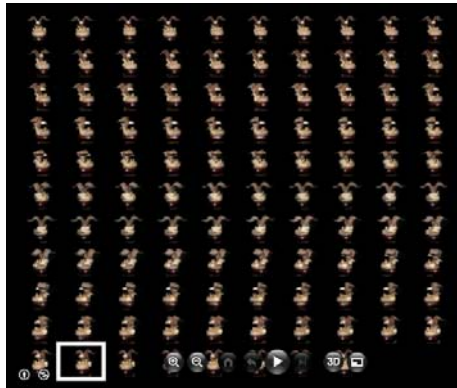
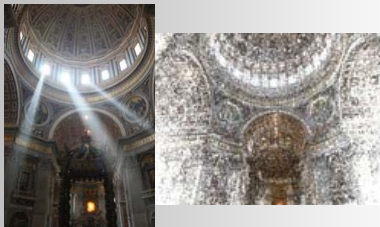


### MS Photosynth, Bundler, etc.

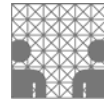
<http://photosynth.net/>

<http://phototour.cs.washington.edu/bundler/>

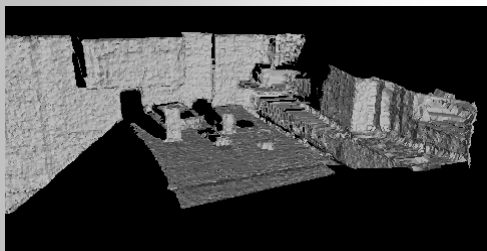
<http://grail.cs.washington.edu/rome/>



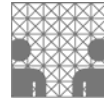
## Seminarthemen



### Laser Range Finder (z.B. SICK LRS 200)



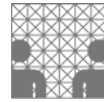
## Seminarthemen



### Time-Of-Flight (TOF) Kameras



### Oberflächenrekonstruktion: Implizite Funktionen



- Surfaces from Unorganized Points (Hoppe)



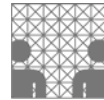
## Oberflächenrekonstruktion: Implizite Funktionen



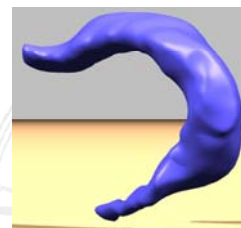
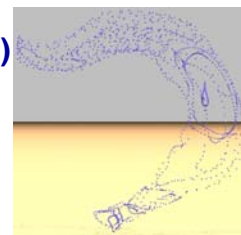
- Surfaces from Unorganized Points (Hoppe)
- Radial Basis Functions



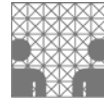
## Oberflächenrekonstruktion: Implizite Funktionen



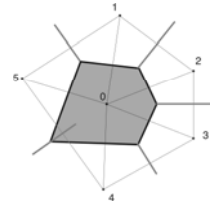
- Surfaces from Unorganized Points (Hoppe)
- Radial Basis Functions
- Level Sets



# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes

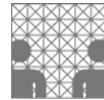


WS 2008/2009

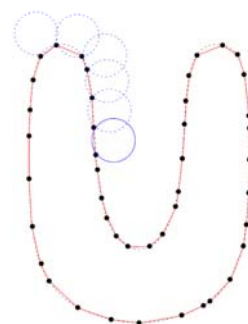
Surface Reconstruction: Dr. Peer Stalling

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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting

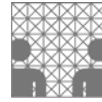


WS 2008/2009

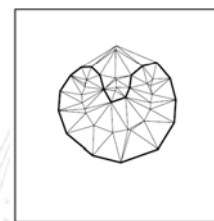
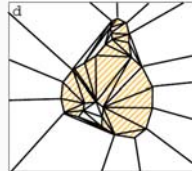
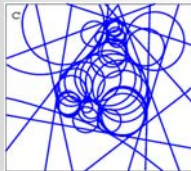
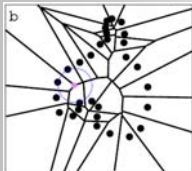
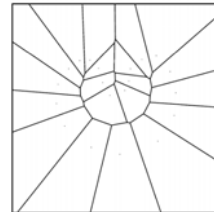
Surface Reconstruction: Dr. Peer Stalling

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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting
- Crust & Power Crust

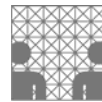


WS 2008/2009

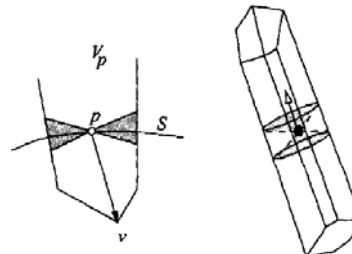
Surface Reconstruction: Dr. Peer Stalling

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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting
- Crust & Power Crust
- Cocone



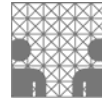
WS 2008/2009

Surface Reconstruction: Dr. Peer Stalling

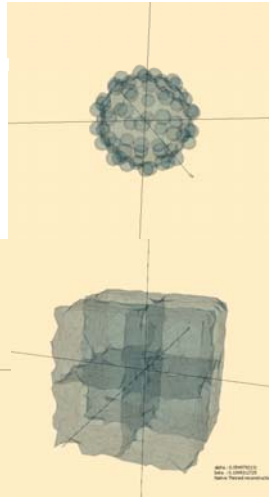
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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting
- Crust & Power Crust
- Cocone
- Refinement Reduction

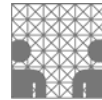


WS 2008/2009

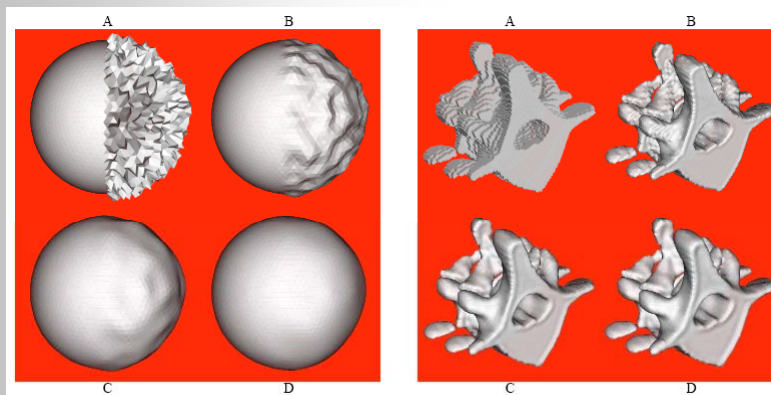
Surface Reconstruction: Dr. Peer Stalling

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p. 17

# Oberflächenmanipulation

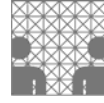


## Oberflächenglättung

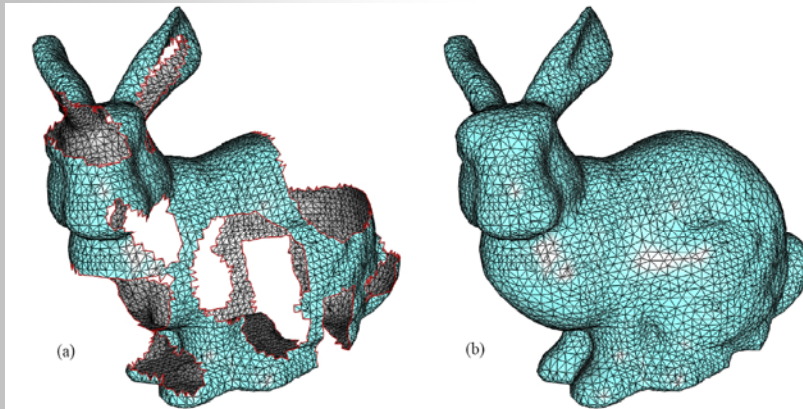


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## Oberflächenmanipulation

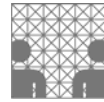


### Löcher füllen

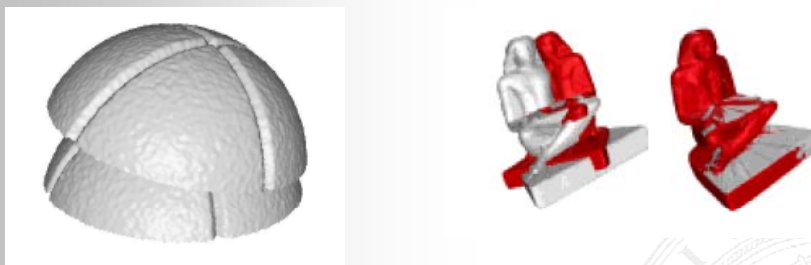


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## Oberflächenmanipulation



### Kombination mehrerer Scans (Alignment/Registration)



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# Formvergleich



## Shape Retrieval-Methoden

