



COMP 600.456: Rendering Techniques

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Johns Hopkins Department of Computer Science
Course 600.456: Rendering Techniques, Professor: Jonathan Cohen



Preliminaries

- 1. Fill out roster**
- 2. Go over syllabus**
- 3. Answer questions**
- 4. Students tell all (names, etc.)**

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Overview of Topics

3D Rendering in general

Surface rendering

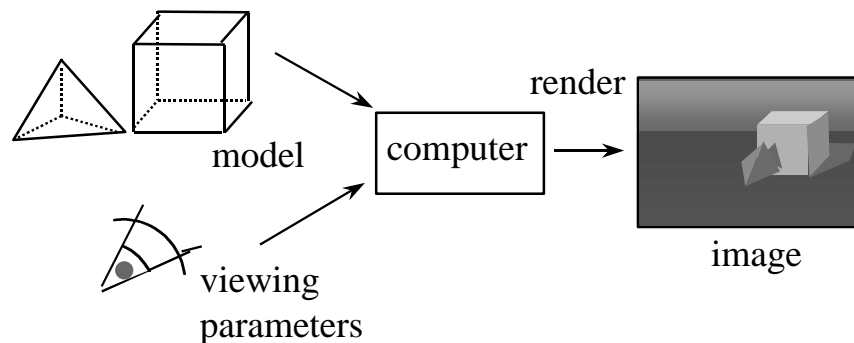
Volume rendering

Image-based rendering

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3D Rendering



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Types of 3D models

Surface (boundary representation)

- Polygonal
- Curved surface (implicit or parametric)

Volume (solid representation)

- Voxels
- Constructive solid geometry (CSG)

Type of model influences type of rendering algorithm

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Surfaces - order of traversal

First by object, then by pixel (picture element)

- Scan conversion

First by pixel, then by object

- Ray casting/tracing

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Volumes - order of traversal

First by volume element, then by pixel

- Splatting

First by pixel, then by voxel

- Ray tracing

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Image-based

First by image sample, then by pixel

- 3D image warping

First by pixel, then by image sample

- Light field rendering

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