2023-1 Computer Graphics
3rd week

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Voxel and point cloud

POLYGONS VS VOXELS |
WHAT'S THE DIFFERENCE?

shapelab

https://youtu.be/bfLFcBk1sBI

Voxel and point cloud

https://youtu.be/hNyviuMBxuE

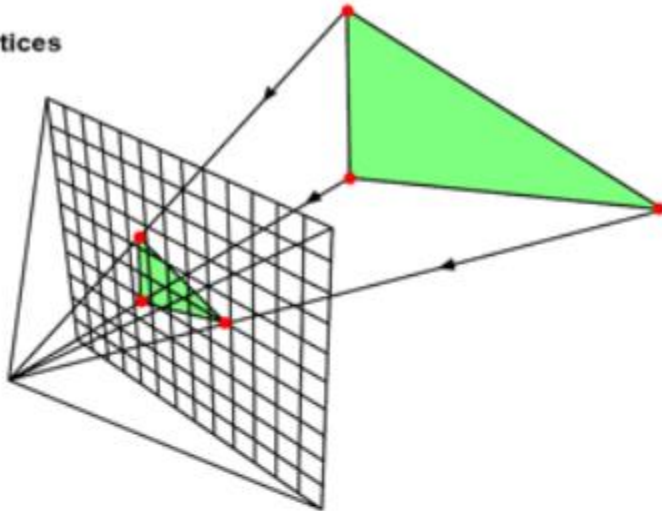# Neural rendering

https://youtu.be/DJ2hcC1orc4

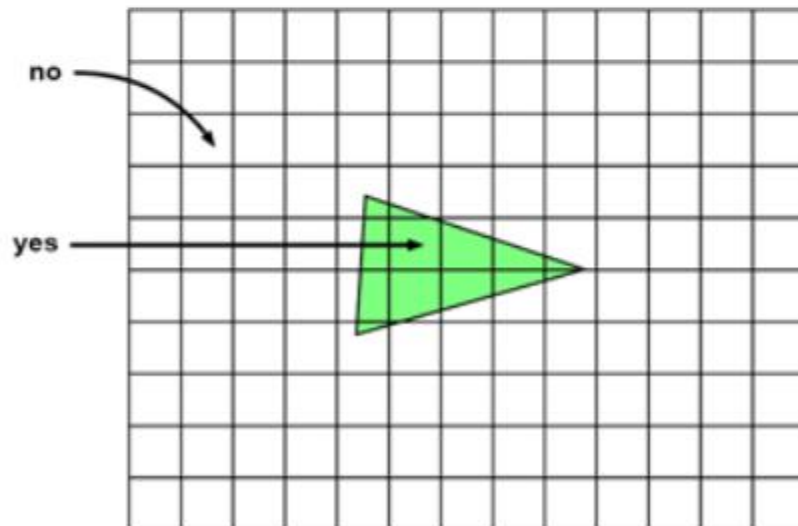What are the pros/cons of using each representation method?

How can we find the corresponding pixels for a mesh?
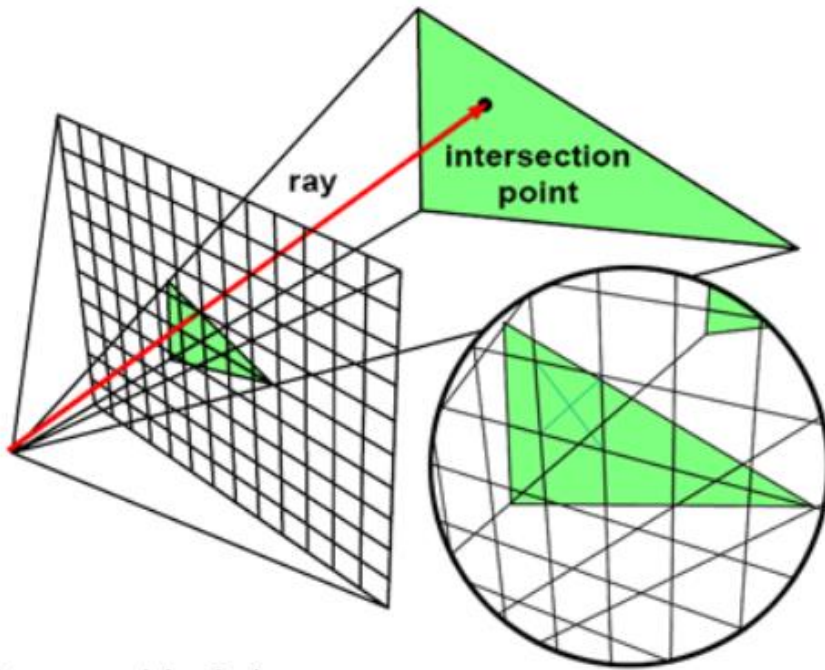
Rasterization

1) Project vertices

2) Loop over pixels. Does the pixel lie in the triangle?

no

yes

Ray casting

ray
intersection point

© www.scratchapixel.com

Pixel value from a 3D mesh

Ray casting

Pixel value from a 3D mesh

Ray casting

Pixel value from a 3D mesh

Ray casting

6. 3D ray tracing part 2

Khan Academy

https://youtu.be/HjDQxAFSwEo

Pixel value from a 3D mesh

https://youtu.be/brDJVEPOeY8

Pixel value from a 3D mesh

https://youtu.be/LAsnQoBUG4Q