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Notes of Shape from shading youtube video

Shading- Variable level of darkness

2 gives cue of actual 3D image

3. there is relation betw Intensity and power.

Shape from Shading – Input Image – Single Image , Output Image- 3D shape of object in image.

Lambertian Surface-ie cotton cloth also called diffused surface .

Incoming light directions if you see radiance leaving the surface it is independent of angle.

Has parameter Albedo(diffusion reflectance)

Lambertian + Specular(Phong Model)  
Exitance- generated power radiated per unit area on radiating surface.

A source can have both

Radiosity- because it reflects

Exitance – because it emits.

B(x)=E(x) +integration{radiosity due to incoming radiance}dw

Shape from shading

Image is 2D and the original world is 3D

Human visual system convert 3D to 2D by number of cues.

@Motion parallex

@Binocular disparity

Object moving at constant speed across the frame appear to move at greater amount if they are close to an observer or camera. that they would be greater distance.

Surface represented by Surface Normals

Scene Radiance

\*the amount of light falls on surface

\*the fraction of light that is reflected

Shape from Shading

Use more images

\*Photometric streo

Input: Output: - 3D

-Several Images - 3d Shape of Object in the images

\*same object -Lightning

\*different lighting Albedo

\*same pose