

Feeling the Shape by Shaping the Feel

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What is Shape ?

Geometry !

What Defines Shape ?

outline

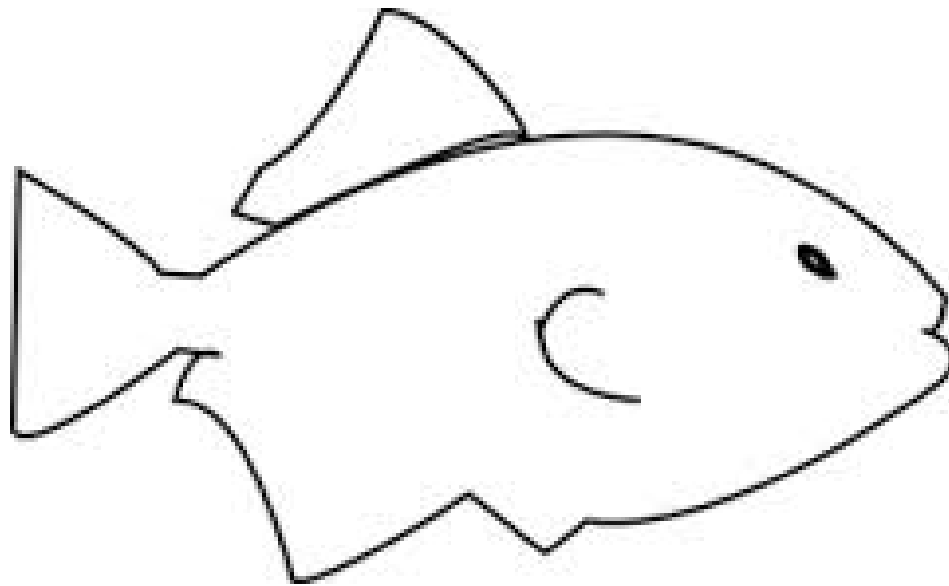
colour

texture

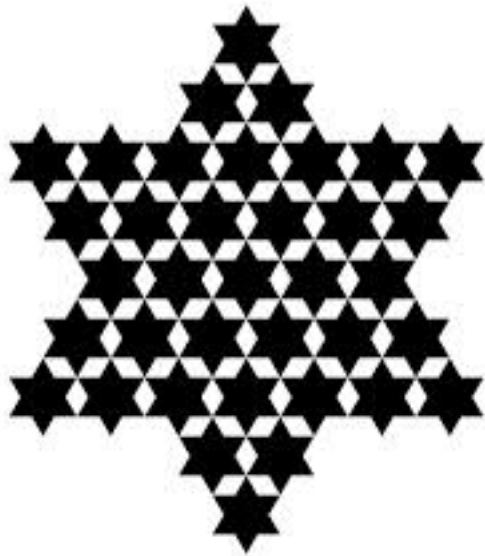
perception

illusion

Outline



Texture



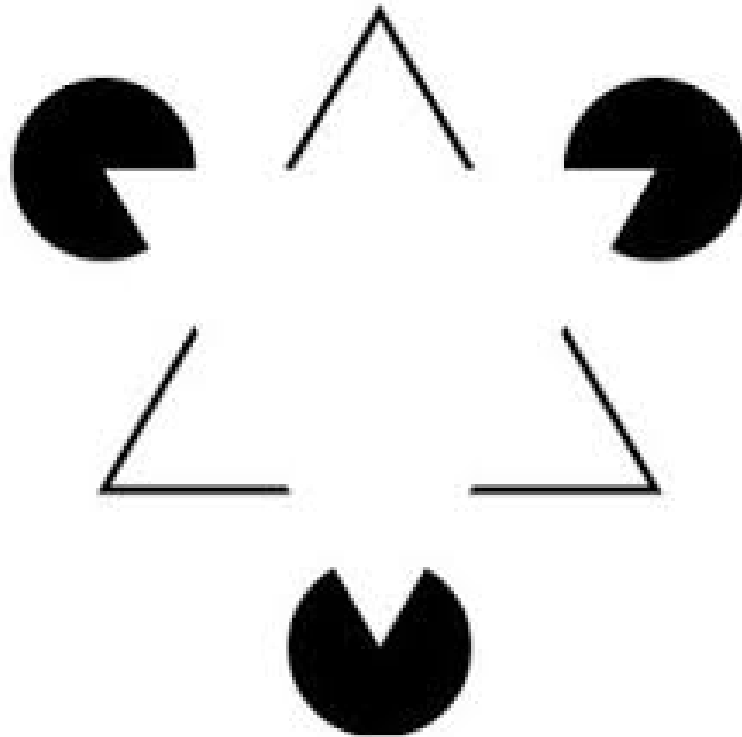
Colour



Perception



Illusion



Illusion



How do machines extract shape?

- Edge Detection
- 3D Reconstruction

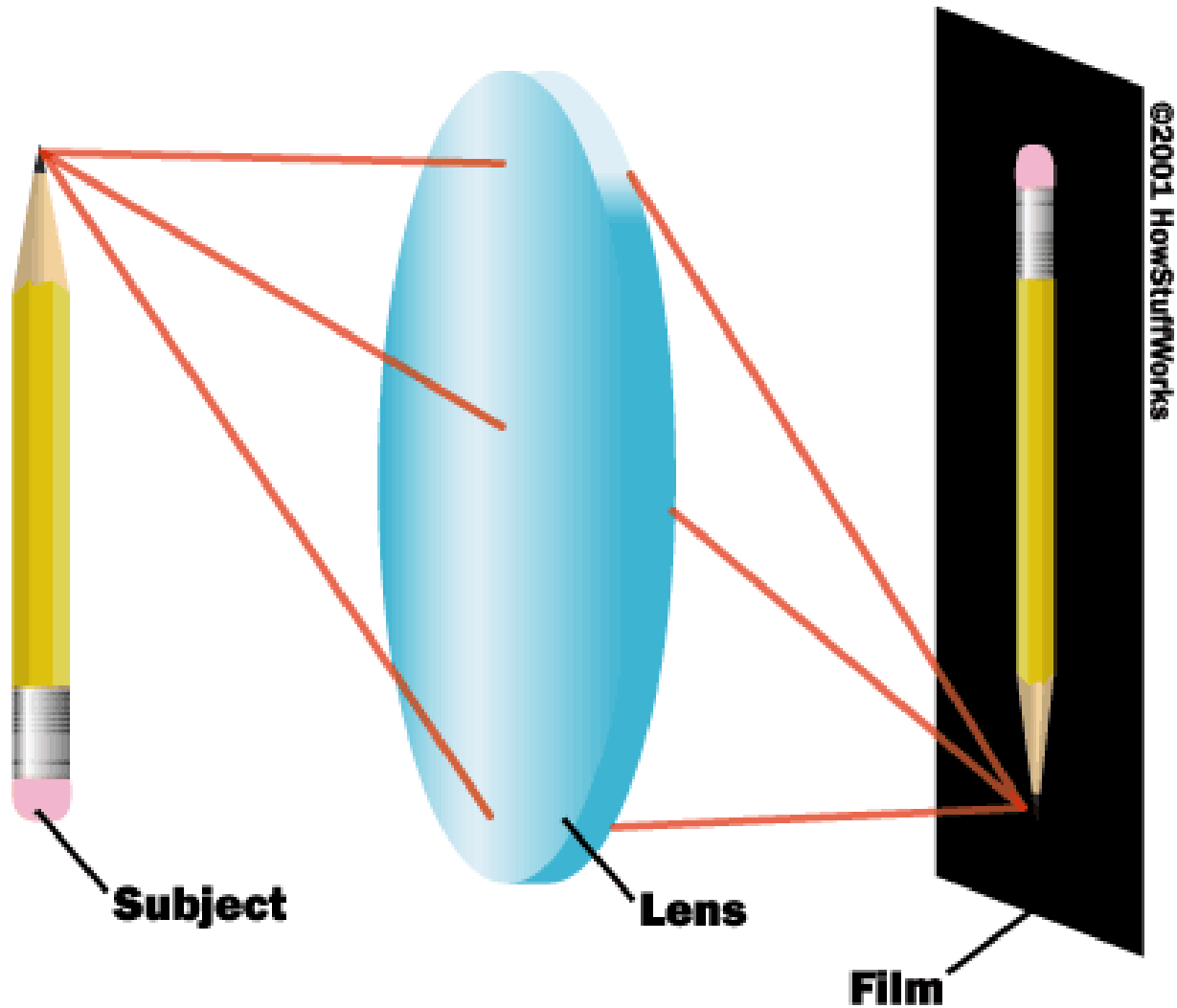
Edge Extraction



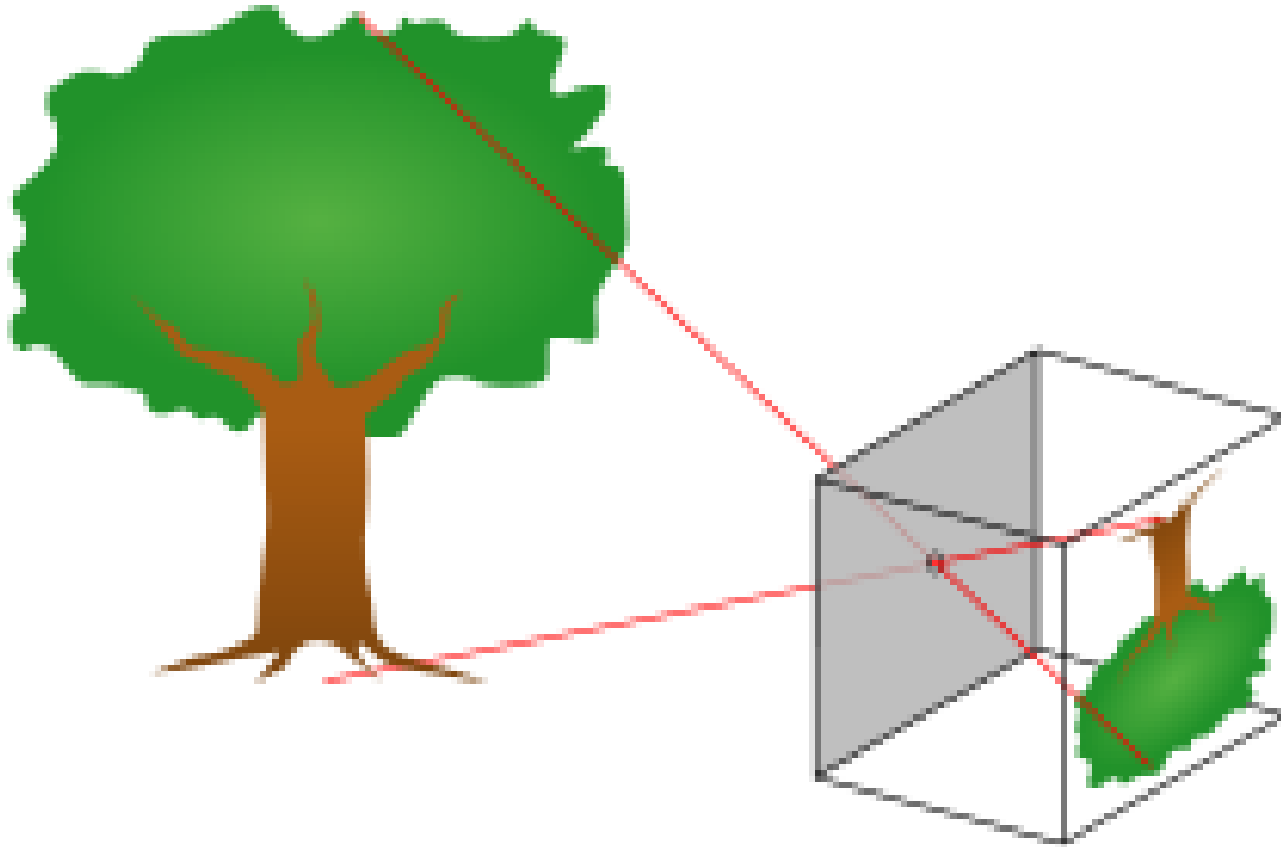
canny



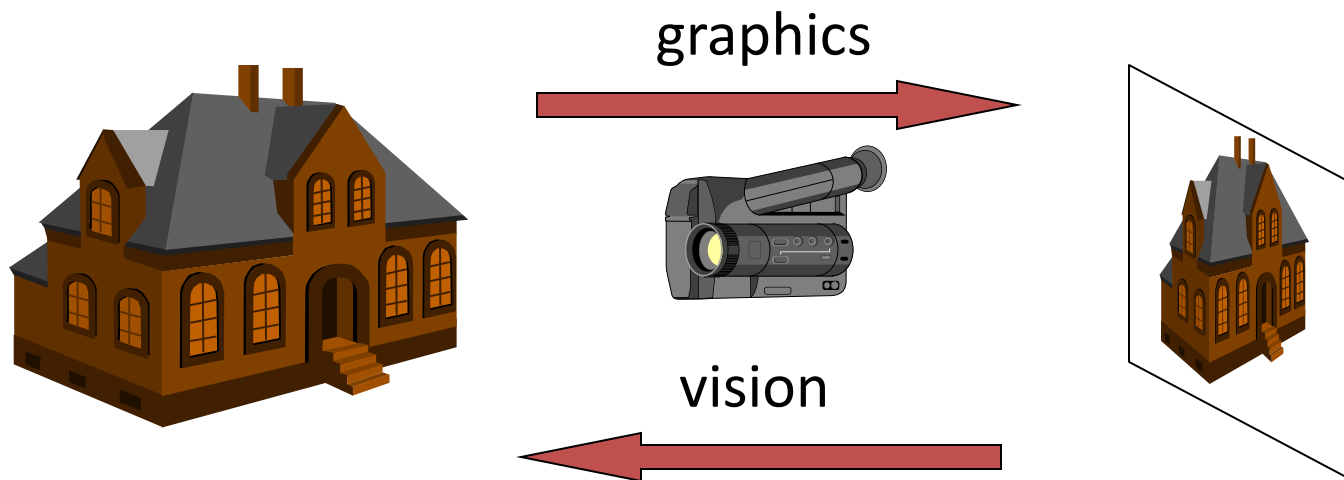
3D Reconstruction



3D Reconstruction



3D Reconstruction

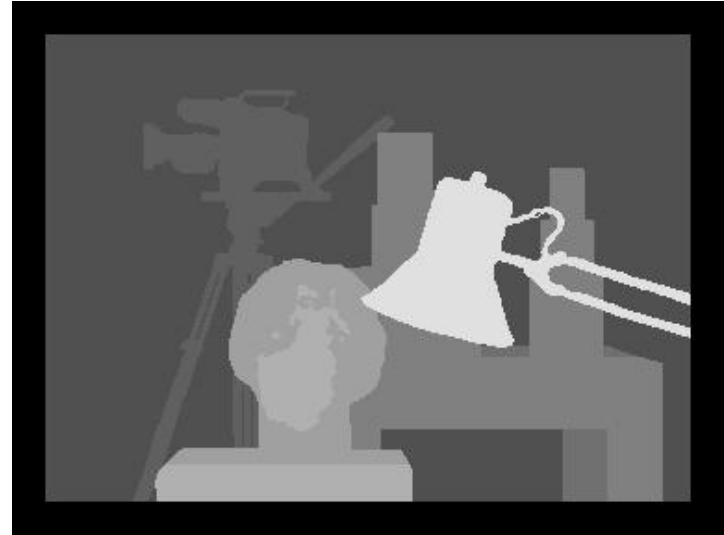


3D Reconstruction

left input image



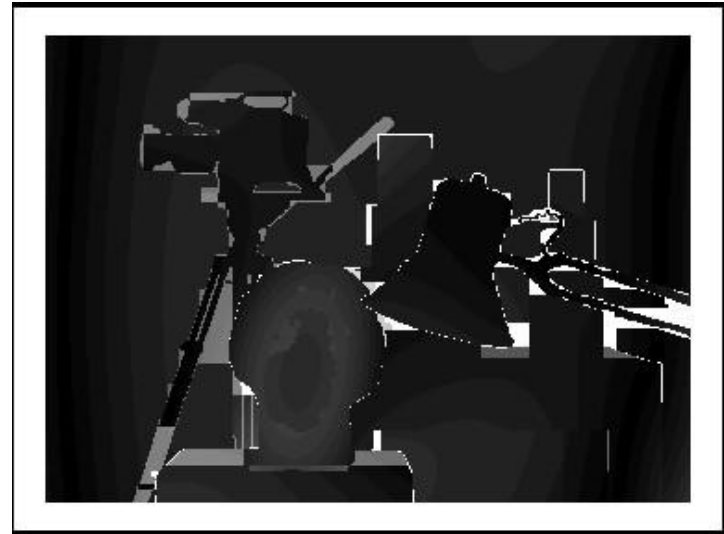
ground truth disparity



our result



disparity error



3D Reconstruction



How do you represent shape ?

Example:



Translate visual info to tactile info



How do you want to make use of Shape ?

- object recognition
- scene recognition
- visualization / augmented reality
- others ??!!
 - Do Something USEFUL !

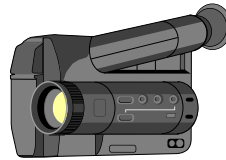
Q1

Can we help a blind man see ?



Q2

Can we use recovered 3D shape to help image processing task?



vision

