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
Perception
Illusion
How do machines extract shape?

• Edge Detection

• 3D Reconstruction
Edge Extraction
3D Reconstruction

[Diagram showing the process of 3D reconstruction with a subject, lens, and film]
3D Reconstruction
3D Reconstruction

graphics

vision
3D Reconstruction

left input image
ground truth disparity

our result
disparity error

(Lin and Tomasi, 01)
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?