Perception-Based Selective Rendering

Presented by: Dong Lu

Supervisor : Assoc Prof Lin Weisi

School of Computer Engineering

Co-supervisor : Assoc Prof Zhu Ce

School of Electrical & Electronic Engineering
which one looks more realistic?
Motivation

• Efficient, realistic rendering of complex scenes is one of the key challenges in computer graphics. One of the primary goals of computer graphics is to produce realistic images. To achieve this, accurate physical modeling of object properties has continuously been developed. But finer physical models often mean much more computation. Thus, question has emerged that "When is the realism "realistic enough"?" or "When should we stop?" And maybe choosing human perception rather than physical accuracy as the standard will offer an answer to this question.
Background

• Perception-based selective rendering tries to economize on rendering computation by taking advantage of the human vision.

• Exploiting Low-level perceptual concept
  Render the parts to which the human viewer is attending at high quality and the rest of the image at lower quality.

• Exploiting High-level perceptual concept
  Render the parts which are important in determining visual realism at high quality and the rest of the image at lower quality.
Our Goal

• Determine relevant features that affect the perception of visual realism.
• Develop rendering methods particularly targeting the visual factors which have great influence on the perception of visual realism.