Light, Materials, Shading and Texture

Summary

Light, Materials, Shading

Main Topics

- Light and Materials
  - Transmission (Reflection, Refraction) / Boundary (Fresnell) / Micro (Smooth / Rough)
- Local Illumination
  - Illumination Hemisphere / Scattering (BRDF) / Transport / Measuring BRDFs
- Shading
  - Materials / Light Sources / Colorization
- Deep Materials
  - MATch - Procedural Material Capture / MaterialGAN (SVBRDF Model)

Texture

Main Topics

- Texture Mapping Concepts
  - Mapping Function / Texture Function / Texture Mapping
- Main Issues
  - Object Repr. / Domain Dim. / Coord. Generation / Attribute Type / Texture Repr.
- Uses of Texture Mapping
  - Appearance (2D, 3D) / Rendering (Bump, Environment, Shadow)
- Computing Maps
  - Sampling+Reconstruction / Resampling / MIP Mapping / Interpolation
- Neural 3D Textures
  - Learning from Exemplars / Perlin Noise