More Lighting

CSCI 4229/5229
Computer Graphics
Summer 2020

Blinn-Phong Light Calculations

$$\text{Light} = M_E + M_A C_A + (N \bullet L) M_D C_D + (N \bullet H)^s M_S C_S$$

- M material (ambient,diffuse,specular,emission)
- C light (ambient,diffuse,specular)
- N surface normal
- L light vector
- V eye vector
- H = L+V normalized half angle
- s shininess

Attenuation

$$att = \frac{1}{k_0 + k_1 d + k_2 d^2}$$

- d distance from light to vertex
- k_0 constant attenuation factor
- k_1 linear attenuation factor
- k_2 quadratic attenuation factor

Types of lights

- Positional Light (x,y,z)
- Directional Light (x,y,z,0)
- Spot Light (position, direction, cutoff)