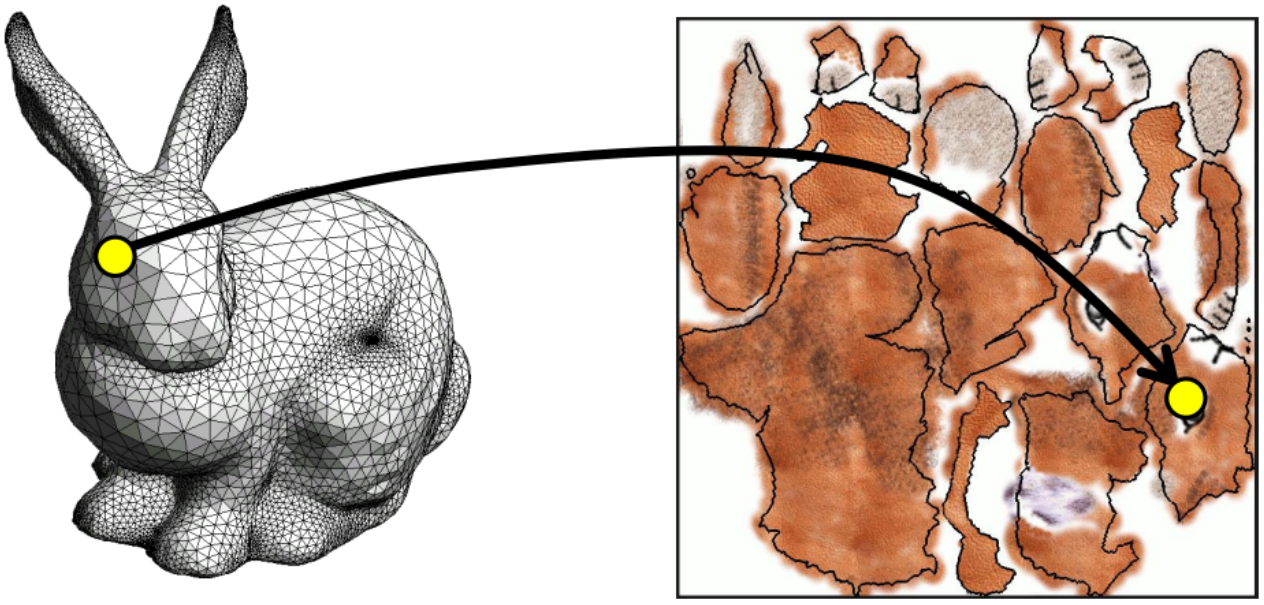
Texture Mapping

Texture mapping aims to:

- map images on surface
- assign color/material property to every point on the surface
- map between surface and texture space



Each point (x, y, z) on the surface has mapped coordinates (u, v) in the texture image:

$$P : \mathbb{R}^3 \to \mathbb{R}^2$$
$$P(x, y, z) = (u, v)$$

Texture itself is a function

$$T : \mathbb{R}^2 \to \text{RGB}$$
$$T(u, v) = (r, g, b)$$

Concatenation of the two functions gives the color function

$$\text{Color}(x, y, z) = T(P(x, y, z))$$

Parametrization

Please refer to Parameterization