Computer Graphics Seminar

MTAT.03.296

Spring 2014

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toetab Skype™

Raimond Tunnel

Recap...

What matrices are these?

$$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} \cos(\alpha) & -\sin(\alpha) & 0 \\ \sin(\alpha) & \cos(\alpha) & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

What is the result?

$$\begin{pmatrix} 0 & -1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 & 4 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} = ?$$

$$\begin{pmatrix} 1 & 0 & 4 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \cdot \begin{pmatrix} 0 & -1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} = ?$$

Consider a point light source...

$$I = L_A \cdot M_A + \frac{1}{d_{light}^2} \cdot \left(n^T \cdot l \cdot L_D \cdot M_D + \left(r^T \cdot v \right)^c \cdot L_S \cdot M_S \right)$$

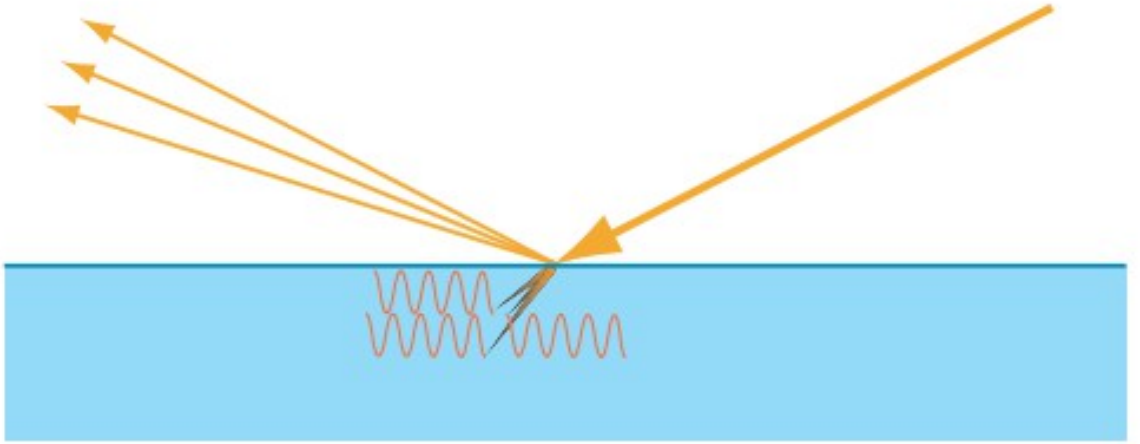
$$f_{linear}(d) = \frac{end - d}{end - start}$$

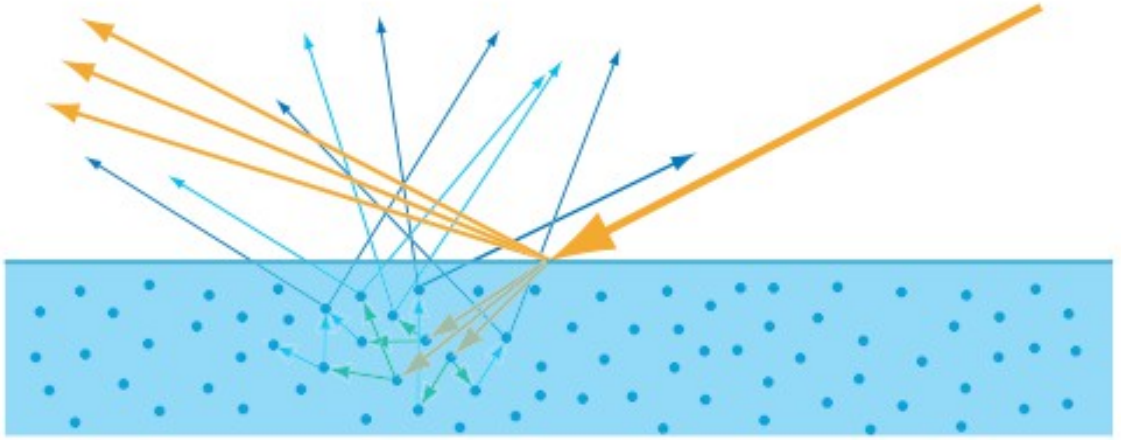
$$p = f\left(d_{viewer} \right)$$

$$I = I \cdot p + (1 - p) \cdot fogColor$$

Linear fog function

Metal vs dielectric?





BRDF - ???

There can be other parameters.

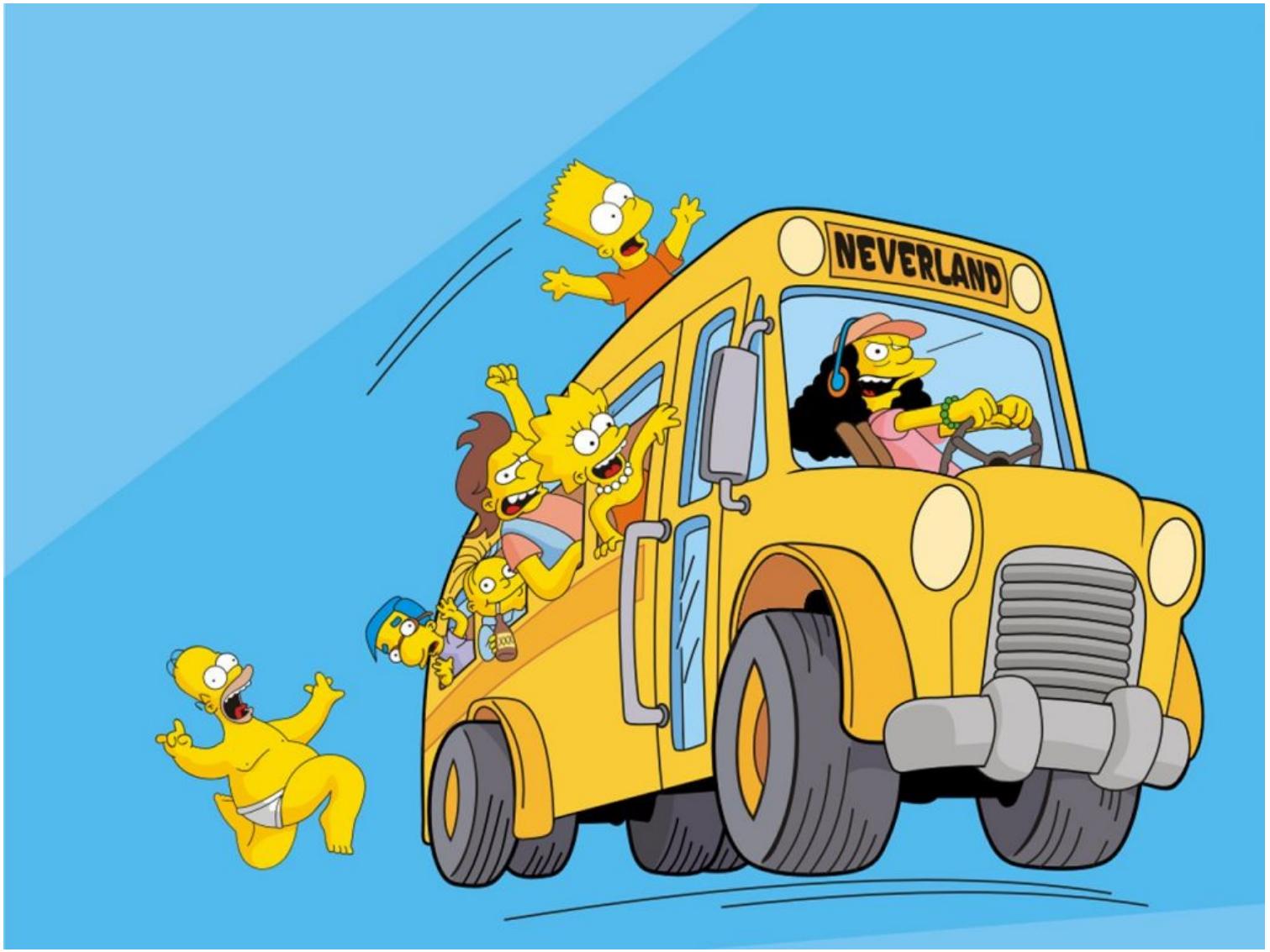
$$f_{microfacet}(l, v) = \frac{F(l, h) \cdot G(l, v, h) \cdot D(h)}{4 \cdot (n \cdot l) \cdot (n \cdot v)}$$

What does this function actually output?

What are the different parameters?

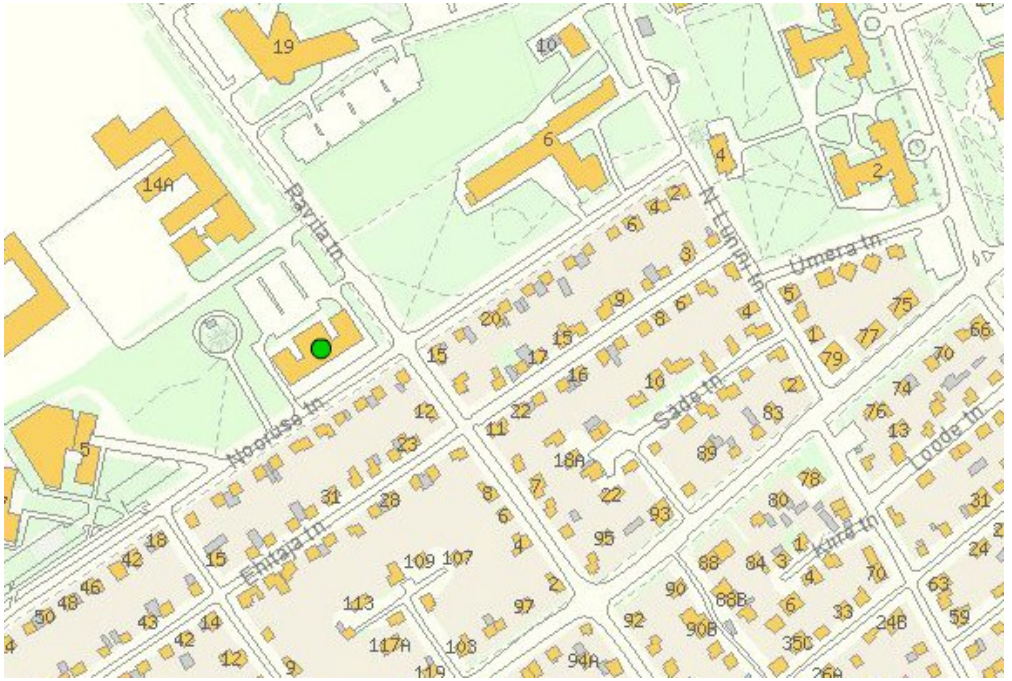
http://simonstechblog.blogspot.com/2011/12/microfacet-brdf.html

Next time... Field Trip!

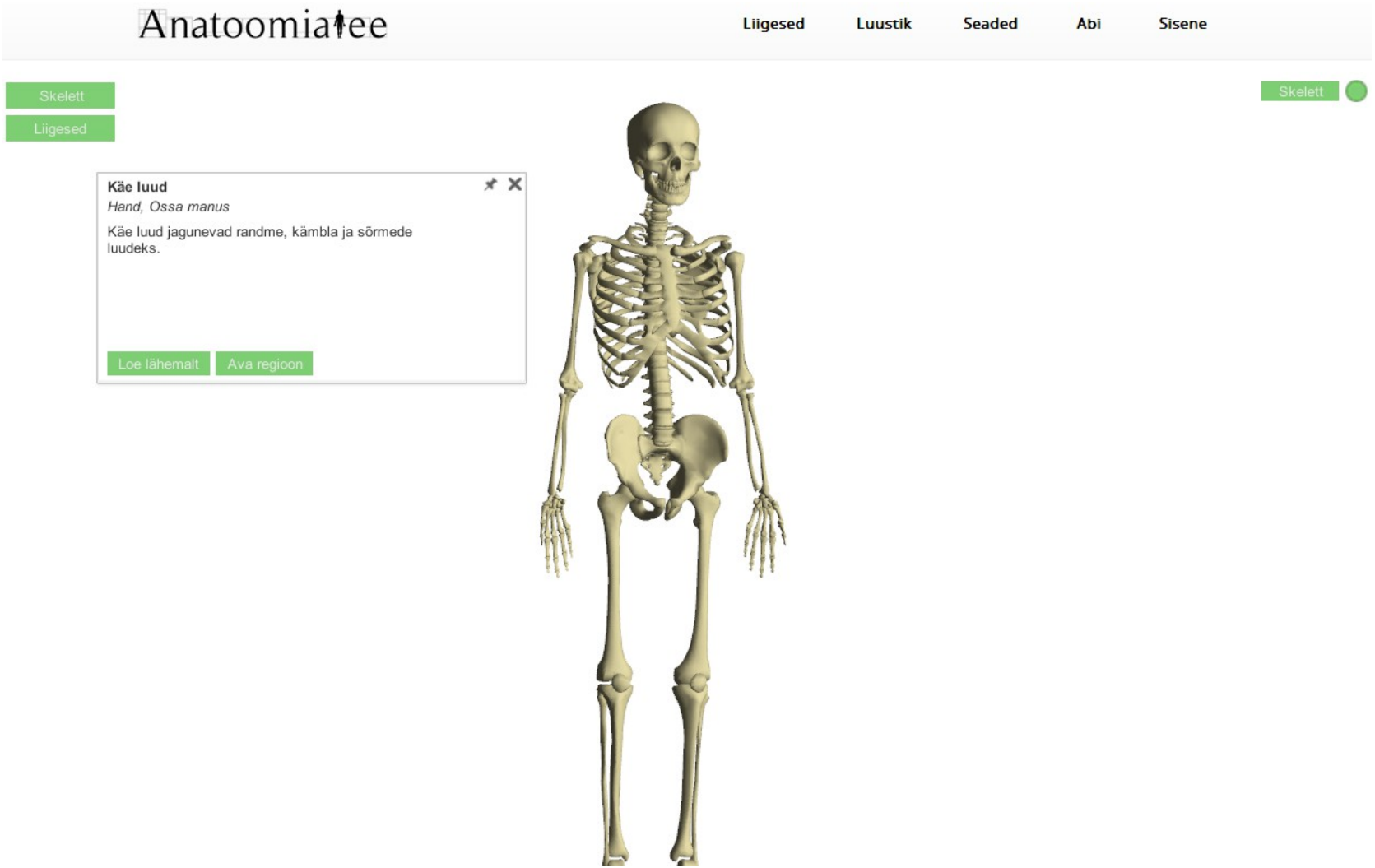


Field Trip

- Institute of Technology
- During seminar time (meet near IoT, Nooruse 1)
- We start around 12:00-12:15
- Object of interest: 3D scanner



How's it going with the projects?



https://www.youtube.com/watch?v=myVq6DDDRv8

http://demo.anatoomia.ee

Thanks for listening!