



Abschlussvortrag Research Track

Montag, den 22.08.2022, 13:00 Uhr,
<https://webconf.tu-clausthal.de/b/ren-czv-au2-g7c>

Forschungsprojekt:

René Kern

“Accelerated Photon Mapping by using Hardware-based Raytracing”

Photon mapping is a numerical solution to the rendering equation that is based on tracing random rays. It works by first tracing the paths of the emitted light (photons) and saving them in a data structure to then collect them later from the perspective of the camera. Especially the collection step is difficult to realize on the GPU due to its sequential nature. We present an implementation of a progressive photon mapper which fully utilizes the ray tracing hardware (RTPM), based on a combination of existing techniques. Additionally, we present two small novel techniques which speed up RTPM even further by reducing the number of photons to be stored and collected. We demonstrate that RTPM outperforms existing hash-based photon mappers, especially on larger scenes.

Gutachter: Prof. Dr. Thorsten Grosch und Prof. Dr. Michael Prilla