Siggraph Course 13

Interactive Ray-Tracing

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Motivation

- **Isn´t "Interactive Ray-Tracing" an Oxymoron?**
  - We all "know":
    - RT: High-quality images, but takes forever
    - TR: Fast, good for hardware, but lower quality
- **We have Nvidia, so what do we need it for?**
  - What are the advantages of RT over rasterization?
- **Well, if it´s real, how can I make it work?**
  - What are the SW and HW approaches to IRT?

Schedule

- 1:30-1:50 Introduction (Slusallek)
- 1:50-2:30 Parallel Ray-Tracing (Parker)
- 2:30-3:00 Interactive Ray-Tracing on PCs (Slusallek)
- 3:00-3:15 Break
- 3:15-3:30 Distributed RT of Massive Models (Slusallek)
- 3:30-4:00 Reprojection and Dynamic Scenes (Reinhard)
- 4:00-4:20 Hardware and Volume RT (Pfister)
- 4:20-4:40 Ray-Tracing on a Chip (Purcell)
- 4:40-5:00 Discussion (All)

What you should take away

- Trade-off: ray-tracing versus rasterization
- State-of-the-art in interactive ray-tracing
- Techniques for efficient ray-tracing in SW
- Approaches to ray-tracing hardware
- List of open problems