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# GASTVORTRAG

## Jason Lawrence

University of Virginia



### “From Measurement to Fabrication: Data-Driven Representations of Material Appearance for Graphics and Vision ”

#### Abstract:

Accurate models of the way materials scatter and absorb incident light are a critical component in computer systems that synthesize realistic images of virtual environments or infer properties of a 3D scene from natural images. I will discuss emerging data-driven strategies along with my own research for measuring and modeling the often complex optical properties of materials such as brushed metal, cloth, wood, marble, and human skin. In particular, I will highlight a system recently built at the University of Virginia that allows accurately measuring the 3D shape and material properties of opaque objects. I will also describe a recent project that demonstrates how to fabricate physical replicas of complex spatially-varying materials using an off-the-shelf printer.

#### Biography:

Jason Lawrence received his PhD from Princeton University and is currently an assistant professor in the Computer Science Department at the University of Virginia. His research focuses on efficient representations and measurement devices for material appearance, real-time and physically-based rendering algorithms, and large-scale parallel image processing. He is the recipient of an NSF CAREER award titled, "The Inverse Shade Tree Framework for Material Acquisition, Analysis, and Design."

**Datum:** 1. Juli 2011, 10:00 Uhr s.t.

**Ort:** TU Wien, Favoritenstr. 9, Stiege 1, 5. Stock, Seminarraum E186

