

Visual Computing Colloquium

November 15, 2018, 2PM

Beyond Pretty Pictures: Computer Graphics as a Tool for Forward and Inverse Problems

Abstract:

A large part of computer graphics deals with the computationally efficient modeling and simulation of light propagating across many scales. The result of this simulation, by default, is meant to be consumed by humans, and so the goal is to achieve a high degree of "plausibility" or "realism". Ideally, however, the outcome of any graphics algorithm should be close to a reliable physical prediction. A central aspect of my research is dedicated to converting computer graphics methodology into a set of technical devices for solving problems in other fields. In my talk, I will illustrate this notion of "inverse computer graphics" by a selection of use cases. Examples include the calibration of free-form optical systems, the reconstruction of 3D shapes and the tracking of moving objects outside the line of sight, and the 3-dimensional reconstruction of fluid mixing processes.

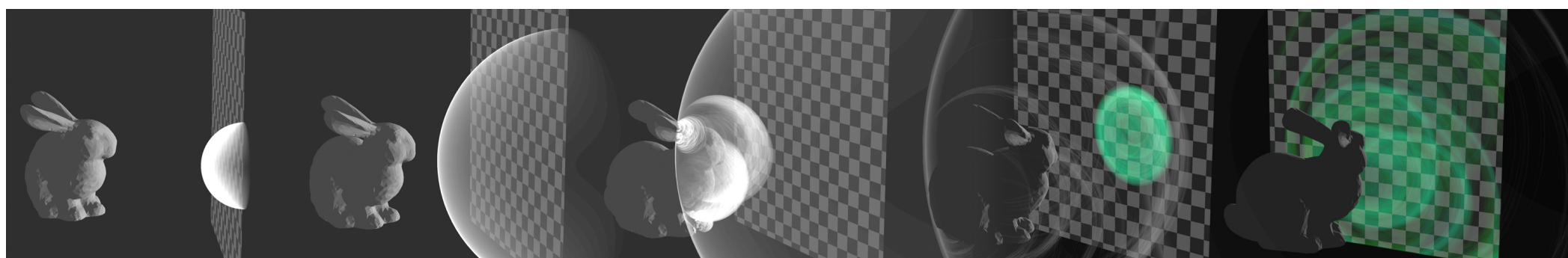
Prof. Dr. Matthias Hullin
University of Bonn

Thursday, November 15, 2018, 2pm
Meeting Room C061

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Vita:

Matthias Hullin is a Professor of Computer Science at the Institute of Computer Science II (Computer Graphics), University of Bonn, where he is head of the Digital Material Appearance Group. Matthias Hullin studied physics at the TU Kaiserslautern and earned his doctorate at the Max Planck Institute for Computer Science and Saarland University. After a two-year research stay at the University of British Columbia in Vancouver (Canada) he accepted a professorship for Digital Material Appearance at the University of Bonn in summer 2013. Hullin was awarded the Otto Hahn Medal of the Max Planck Society and the "Entrepreneur Magazine" for founding Retrode UG.

