Looking Around Corners: New Opportunities in Femto-Photography

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Abstract
Can we look around corners beyond the line of sight? Our goal is to exploit the finite speed of light to improve image capture and scene understanding. New theoretical analysis coupled with emerging ultra-high-speed imaging techniques can lead to a new source of computational visual perception. We are developing the theoretical foundation for sensing and reasoning using Femto-photography and transient light transport, and experimenting with scenarios in which transient reasoning exposes scene properties that are beyond the reach of traditional computer vision. (Joint work with a large team, see http://raskar.info/femto)

Biography
Ramesh Raskar joined the Media Lab from Mitsubishi Electric Research Laboratories in 2008 as head of the Lab’s Camera Culture research group. His research interests span the fields of computational photography, inverse problems in imaging and human-computer interaction. Recent inventions include transient imaging to look around corners (Femto-photography), next generation CAT-Scan machine, imperceptible markers for motion capture (Prakash), long distance barcodes (Bokode), touch+hover 3D interaction displays (BiDi screen), low-cost eye care devices (Netra) and new theoretical models to augment light fields (ALF) to represent wave phenomena.

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