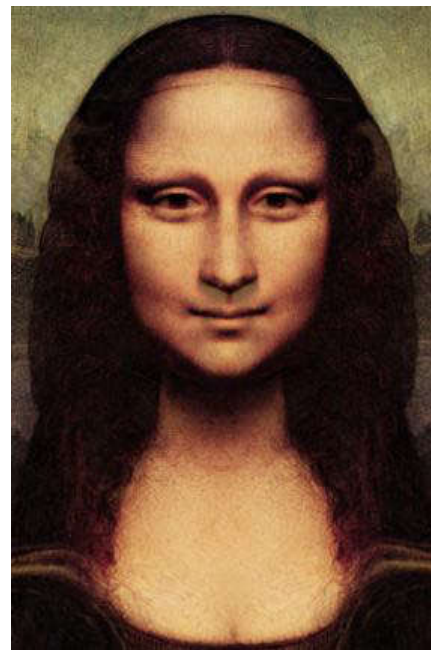


Caltech
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Computer
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Series

Tuesday,
May 12th, 10:30am
Moore 80



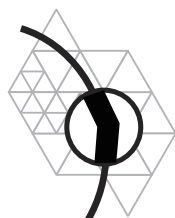
Viewing and Manipulating 3D Scenes Through Photographs

Steve Seitz

Vision Technology Group, Microsoft Research

The problem of acquiring and manipulating photorealistic visual models of real scenes is a fast-growing new research area that has spawned successful commercial products like Apple's QuickTime VR. An ideal solution is one that enables (1) photorealism, (2) real-time user-control of viewpoint, and (3) changes in illumination and scene structure.

In this talk I will describe recent work that seeks to achieve these goals by processing a set of input images (i.e. photographs) of a scene to effect changes in camera viewpoint and 3D editing operations. Camera viewpoint changes are achieved by manipulating the input images to synthesize new scene views of photographic quality and detail. 3D scene modifications are performed interactively, via user pixel edits to individual images. These edits are automatically propagated to other images in order to preserve physical coherence between different views of the scene. Because all of these operations require accurate correspondence, I will discuss the image correspondence problem in detail and present new results and algorithms that are particularly suited for image based rendering and editing applications.



Hosted by: Multi-Res Modeling Group