*CVPR 99 Tutorial on*
*3D Photography*

# Introduction

**Steve Seitz**
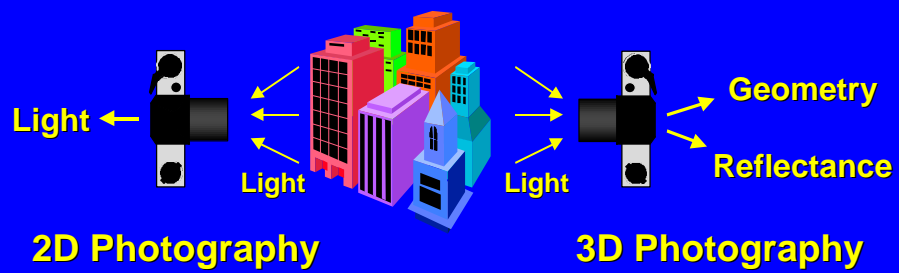**Carnegie Mellon University**

**Brian Curless**
**University of Washington**

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# 3D Photography



Light ←

Light

**2D Photography**

Light

**Geometry**

**Reflectance**

**3D Photography**
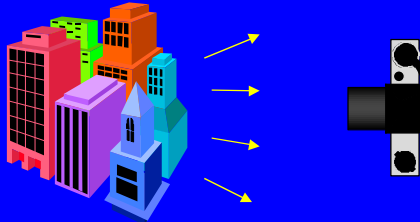
# 3D Photography from 2D Photography

*Objects Radiate Visible Light*



*This Pattern of Light Depends On*

- Scene illumination
- Surface geometry
- Surface reflectance

*Cameras Capture This Light*

- Enables analysis of scene structure

# Passive vs. Active 3D Photography

*Objective*

- Infer properties of the scene from scene radiance

*Two Styles*

- *Passive* sensing of light already in environment
  - > does not require control of environment
  - > accuracy dependent on scene texture
- *Active* control of illumination
  - > project light into environment
  - > aids reconstruction, enables high accuracy
  - > not always applicable

## Speakers

*Paul Debevec,* **University of California, Berkeley**

*Jean-Yves Bouguet,* **California Institute of Technology**

*Szymon Rusinkiewicz,* **Stanford University**

*Brian Curless,* **University of Washington**

*Steven Seitz,* **Carnegie Mellon University**

## Online Course Notes
**www.cs.rochester.edu/u/kyros/outgoing/tutorials/agljg484576dag/**

*Slides*
- **Acrobat versions of speakers' slides**

*Abstracts*
- **Digital Michelangelo Project**
- **Passive vision intro**
- **Modeling architecture from photographs**

*Models, Movies, Online Presentations*
- **VRML models, HTML**
- **Quicktime movies**

*Papers*
- **Electronic versions of relevant publications**