Introduction

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SIGGRAPH 99 Course on
3D Photography

http://www.cs.cmu.edu/~seitz/course/3DPhoto.html

3D Photography

2D Photography

3D Photography

Light

Geometry

Reflectance

Light

Light

Light
**3D Photography from 2D Photography**

*Objects Radiate Visible Light*

![Objects radiate visible light diagram]

*This Pattern of Light Depends On*
- Scene illumination
- Surface geometry
- Surface reflectance

*Cameras Capture This Light*
- Enables analysis of scene structure

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**Passive vs. Active 3D Photography**

*Objective*
- Infer structure from radiated light

*Two Styles*
- **Passive** sensing of light already in environment
  - widely applicable
  - cheap
  - brittle, less accurate
  - Morning Session
- **Active** control of illumination
  - not always viable
  - expensive but getting cheaper
  - extremely accurate
  - Afternoon Session
Speakers

Jean-Yves Bouguet, Intel Corporation

Brian Curless, University of Washington

Paul Debevec, University of California, Berkeley

Marc Levoy, Stanford University

Steven Seitz, Carnegie Mellon University

Speakers

Brian Curless University of Washington

8:50pm Acquiring Images
1:30pm Overview of Active Vision
2:55pm Shape and Appearance from Range Data
Speakers

Steven Seitz  Carnegie Mellon University

8:30pm  Introduction
9:35pm  Overview of Passive Vision
11:20pm  From Images to Voxels

Speakers

Paul Debevec  University of California, Berkeley

10:30pm  Facade:  Modeling Architectural Scenes
Speakers

Jean-Yves Bouguet  Intel Corporation

2:15pm  Desktop 3D Photography

Speakers

Marc Levoy  Stanford University

3:50pm  The Digital Michelangelo Project
Course Objectives

What NOT to expect
- “Build-your-own” 3D camera instructions

What to Expect
- Practical understanding of issues
- Overview of major approaches
- Latest research results
- Current capabilities, limitations

Course Notes
http://www.cs.cmu.edu/~seitz/course/3DPhot.html

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