

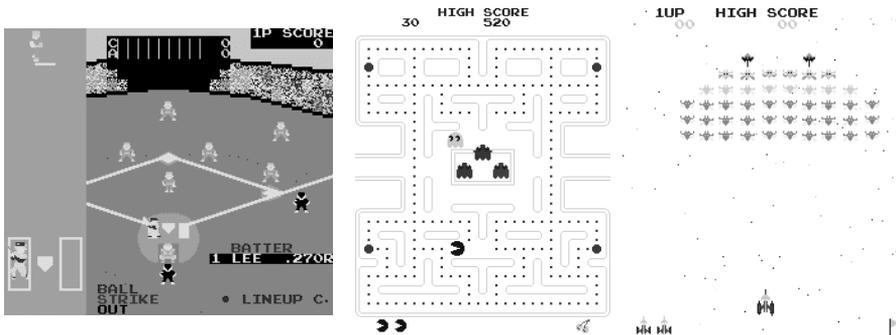
3D Digital Contents

September 13, 2004

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What Does 3D Mean? (1/3)

- Computer games like these are 2D:



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What Does 3D Mean? (2/3)

- Computer games like this are 3D:



Screenshot from Age of Mythology, © Microsoft and Ensemble Studio

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What Does 3D Mean? (3/3)

- Movies are 2D, but why do we call these 3D animations:
 - Luxo Jr.
 - Toy Story, A Bug's Life, Finding Nemo...etc. from Pixar
 - Ants, Shrek, Ice Age...etc.

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Answer Anyone?

- What are the limits of 2D?

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How to Create 3D Contents

- AutoCAD: used for architectures (buildings)
- 3D Studio Max, Softimage...etc.
- Maya is a major production tool used in art schools.
- Problems? It takes an artist, and it's still hard to make it look real!

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3D Photography

- Currently ongoing: National Digital Archives Project.
- How do we digitize the massive assets in various museums?
 - QuickTime VR object movies
 - 3D Scans: Cyberware scanner, Digital Michelangelo

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Image-Based Rendering

- Can we build 3D contents from photographs directly?
 - Difference from computer vision?
- Can we make the objects look more real?
 - Difference from texture mapping?

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Open Problems

- Obtaining material models from photos/videos.
- High-quality rendering that matches the quality of images taken by digital cameras.
- Animation.