

A Brief History of Computer Graphics



Oregon State
University

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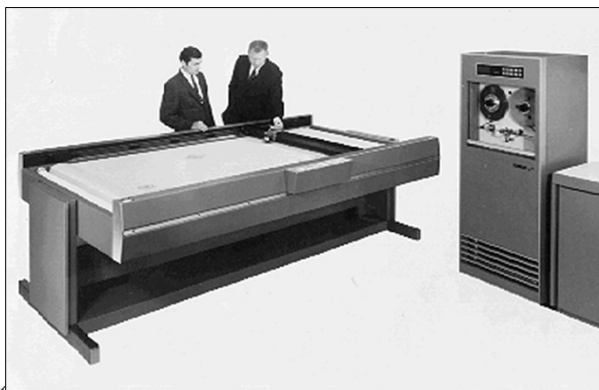
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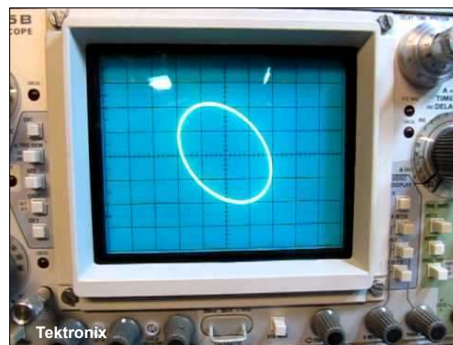
1950s

- Pen Plotters
- Computer-controlled oscilloscopes



Calcomp

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1960s

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- Ivan Sutherland's SketchPad project
- Interaction
- Vector displays



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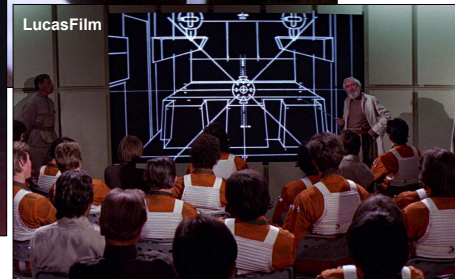
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1970s

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- Direct View Storage Tubes (Oregon's own **Tektronix**!)
- Color raster displays (CRTs)
- Hardware-accelerated vector displays
- Commercial production companies emerge
- SIGGRAPH conferences (started in 1974)
- Star Wars Episode IV



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1980s

- Hardware-accelerated color raster displays
- Flight simulators
- Silicon Graphics, Inc. (SGI)
- Pixar
- Scientific visualization
- Luxo Jr., Tin Toy
- The Last Starfighter, TRON, Star Trek II: The Wrath of Khan, Young Sherlock Holmes, The Abyss
- **Jen-Hsun Huang graduates from Oregon State University with a BSEE degree, 1984**

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1990s

- Texture-mapping in hardware
- OpenGL
- PC graphics cards
- Terminator 2, Jurassic Park, Toy Story, Star Wars Episode 1

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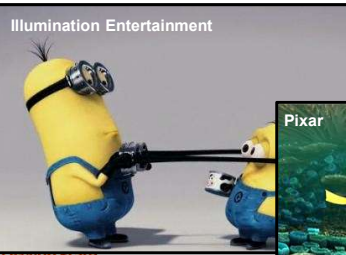
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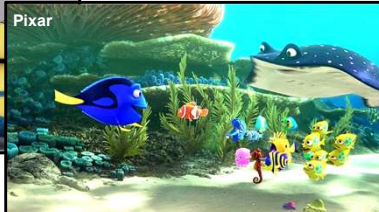
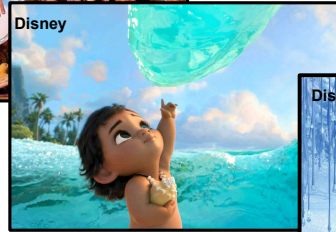
2000s

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- Hardware Shaders
- OpenGL-ES (Embedded Systems, i.e., intended for underpowered hardware)
- More movies!



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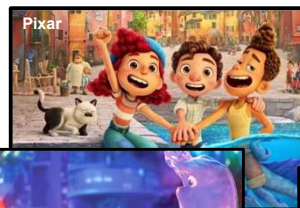
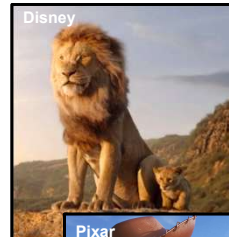
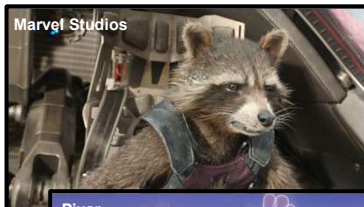
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2000s

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- CG is now so much a part of movies that we don't even think about it



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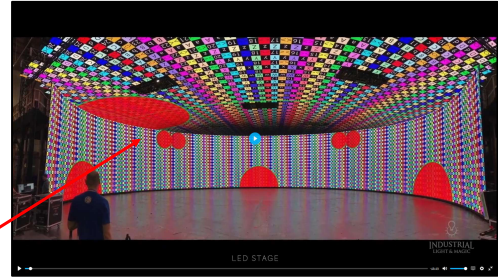
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Where Are We Now?

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- Ongoing OpenGL-ES/WebGL merger with OpenGL desktop
- Mobile platforms (tablets, phones)
- 3D movies
- Virtual and Augmented Reality
- Hardware support for ray-tracing
- Vulkan, DX12, Metal
- Game Engines and giant screens being used for live backgrounds in movie-making

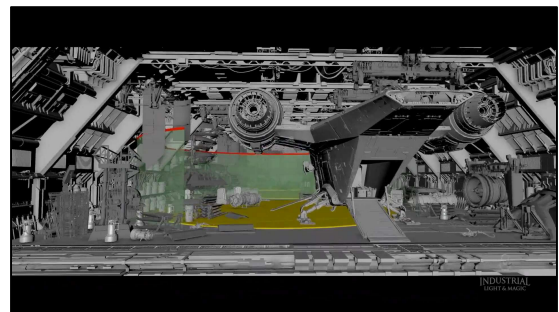
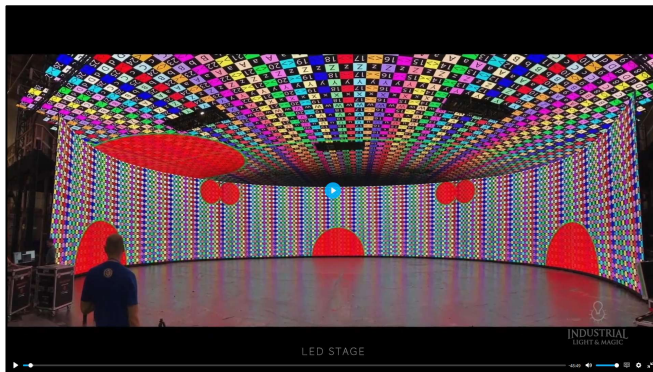


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Immense Virtual Movie Sets are a Big Thing Now

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First used in producing *The Mandalorian*?



The screen is 270° around and 20 feet high!

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Uses for Computer Graphics

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