

A Brief History of Computer Graphics



Oregon State
University

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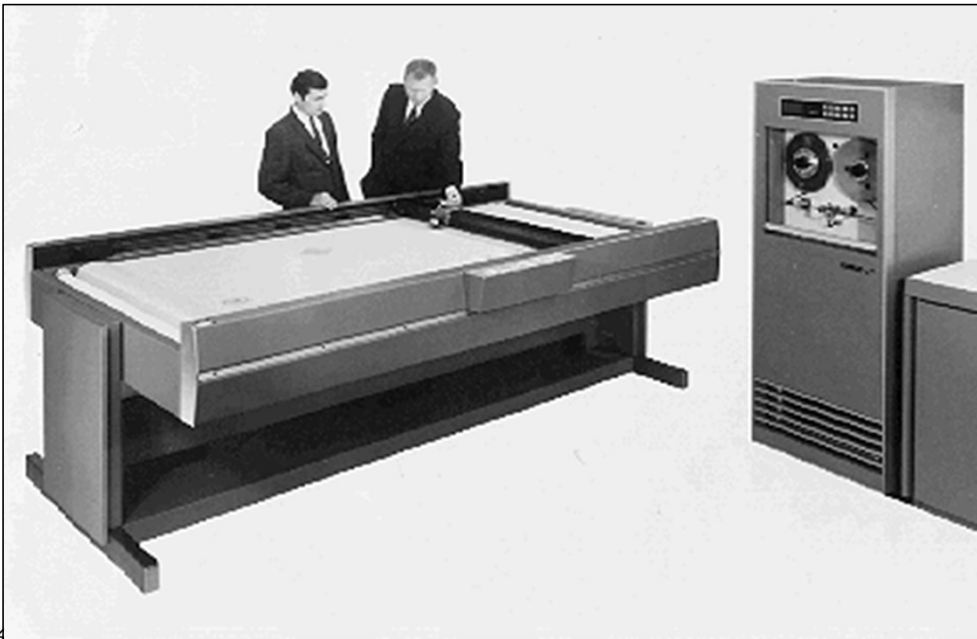


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1950s

- Pen Plotters
- Computer-controlled oscilloscopes

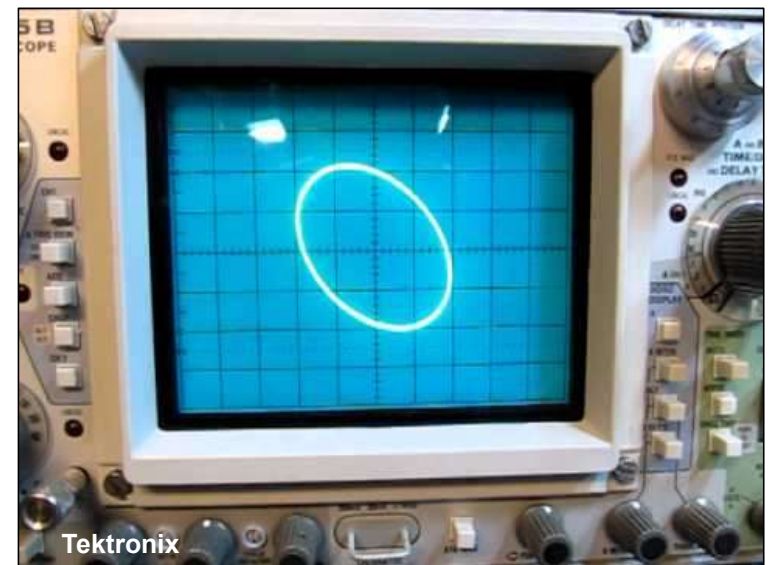


Calcomp



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Tektronix

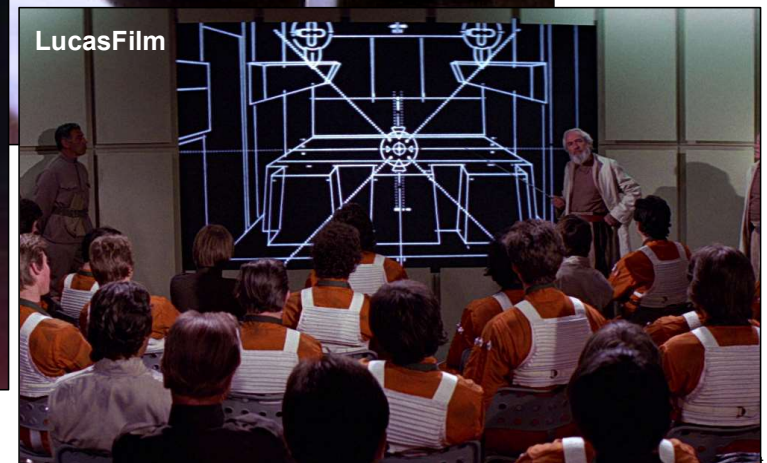
1960s

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



1970s

- 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

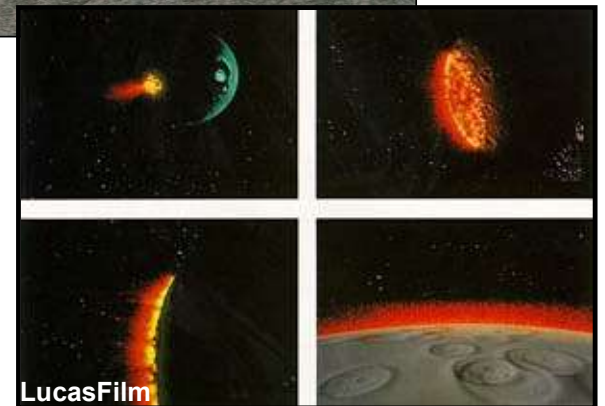
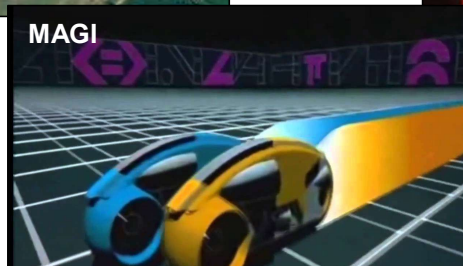
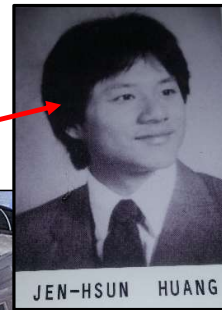


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1980s

- 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**

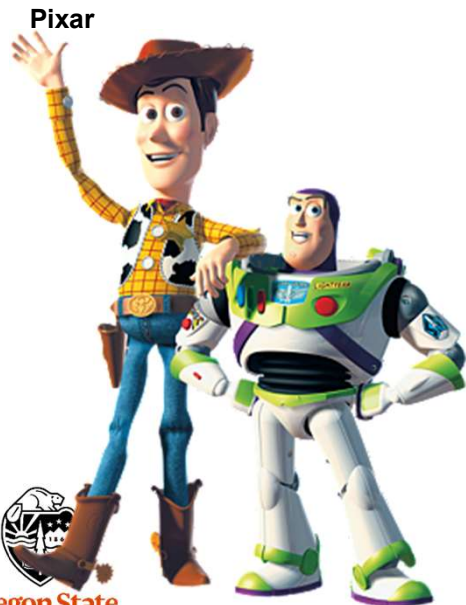


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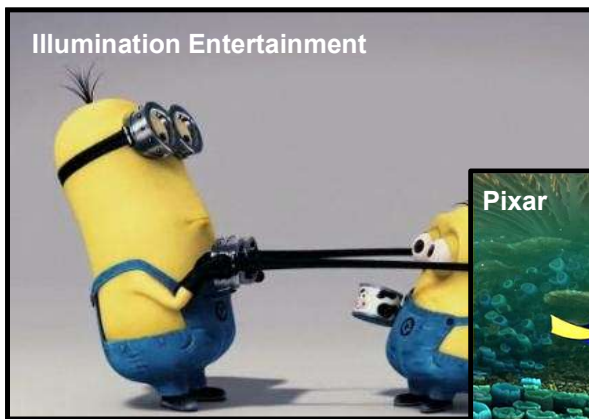
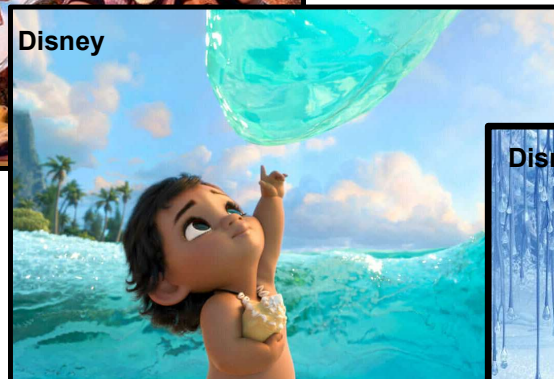
1990s

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



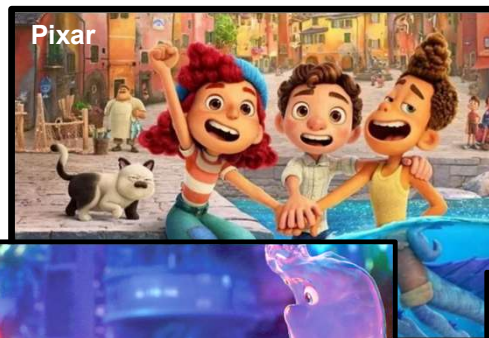
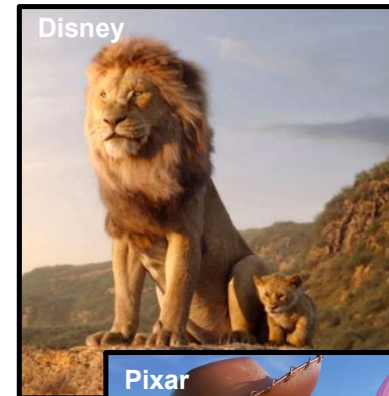
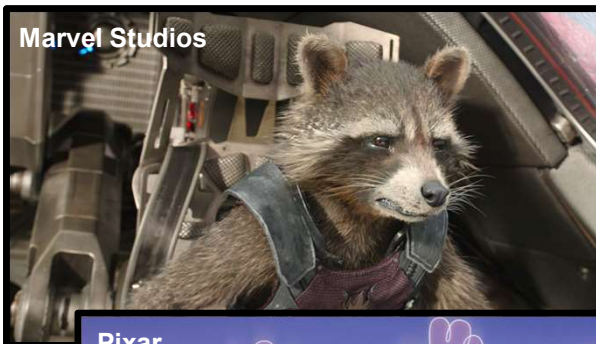
2000s

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



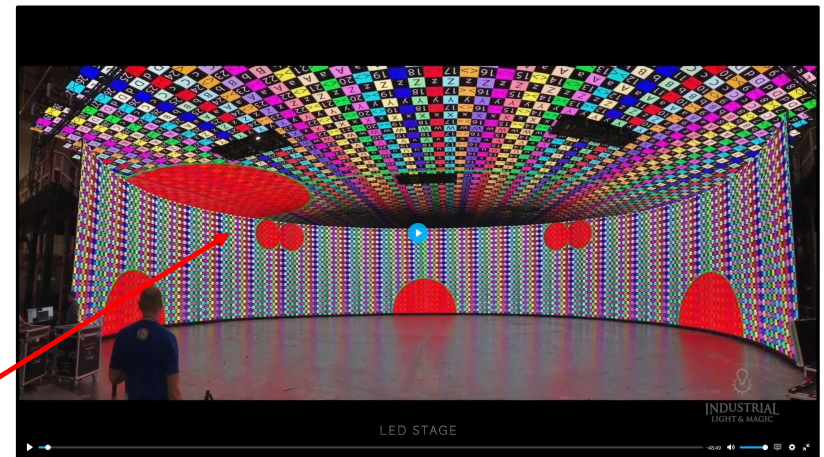
2000s

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



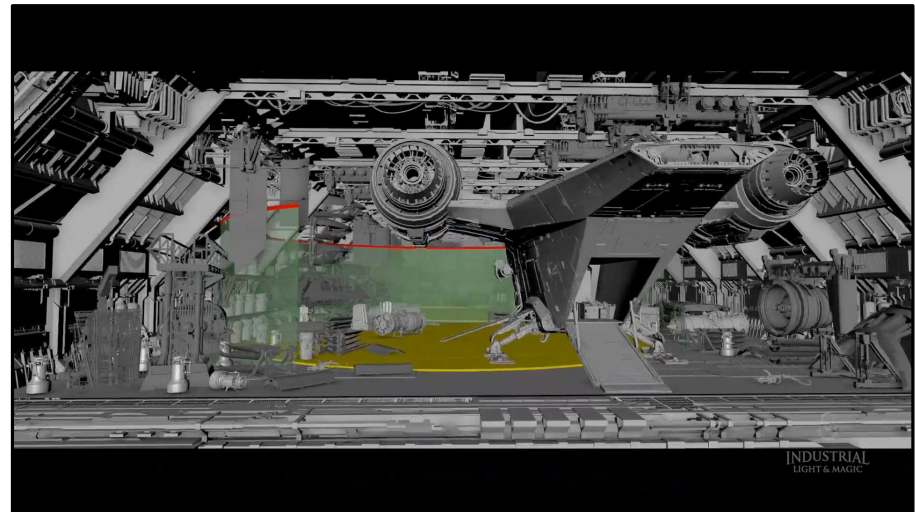
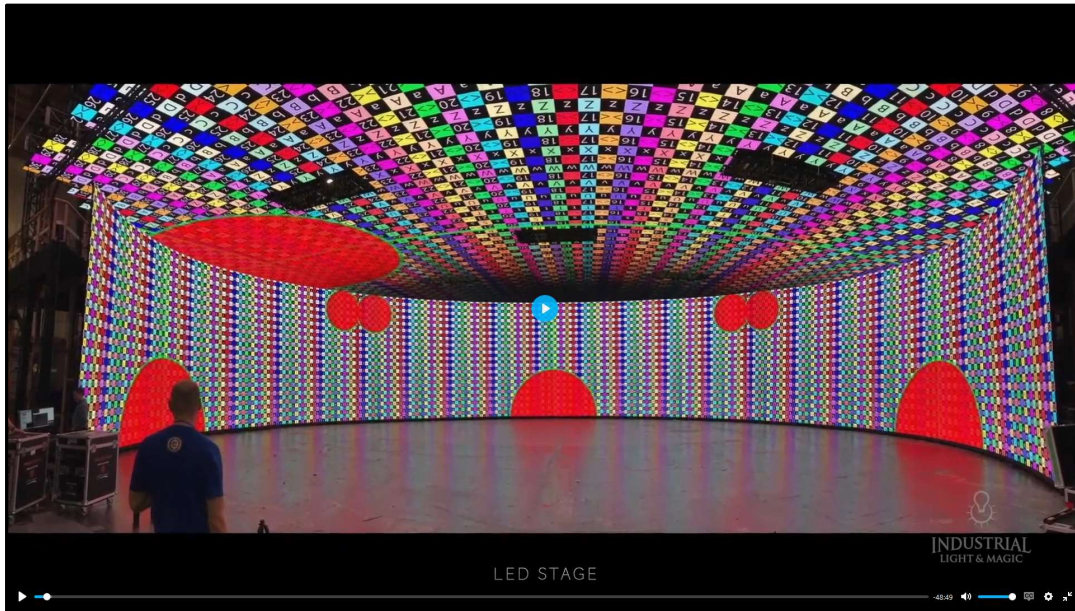
Where Are We Now?

- 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



Immense Virtual Movie Sets are a Big Thing Now

First used in producing *The Mandalorian*?



The screen is 270° around and 20 feet high!



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Uses for Computer Graphics

11

Animation Training Traffic
Simulation Art Navigation Movies History
Games TV Advertising
Cartoons Architecture
City Planning Planning Commercials Cartography
Biology Styling Education Design
Scientific Visualization Amusement Parks Chemistry
Data Visualization
Medicine Manufacturing Land Use
Construction Veterinarian Science Management

Computer Graphics is for everyone!



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