

PSI3572 – Aula 2

Computer Graphics

PRINCIPLES AND PRACTICE

Foley • van Dam • Feiner • Hughes

SECOND EDITION in C



THE SYSTEMS PROGRAMMING SERIES



COMPUTER GRAPHICS

PRINCIPLES AND PRACTICE

THIRD EDITION



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JOHN F. HUGHES • ANDRIES VAN DAM • MORGAN MCGUIRE
DAVID F. SKLAR • JAMES D. FOLEY • STEVEN K. FEINER • KURT AKELEY

Você conhece alguma entidade científica que reúna especialistas e publique trabalhos na área de Computação Visual (e áreas correlatas)?

Quais?

A sigla ACM significa alguma coisa para você?



<https://www.siggraph.org/>

A special interest group of the Association for Computing Machinery (ACM), the world's first and largest computing society, since its beginning in **1974** as a small group of specialists in a previously unknown discipline, ACM SIGGRAPH has evolved to become an international community of

researchers,

artists,

developers,

filmmakers,

scientists, and

business professionals

who share an interest in computer graphics and interactive techniques.



<https://www.siggraph.org/>

ACM SIGGRAPH offers a diverse menu of programs and services for its members and the computer graphics community:

- [SIGGRAPH and SIGGRAPH Asia conferences](#)
- [Symposia, conferences and workshops](#)
- [Student and Professional Chapters](#)
- [Education Program](#)
- [Digital Arts Collaborative](#)
- [ACM Digital Library - publications and conference proceedings](#)
- SIGGRAPH Video Review
- [Awards program](#)
- [Volunteer program](#)

E a sigla IEEE significa alguma coisa para você?



The Institute of Electrical and Electronics Engineers (IEEE)

The world's largest technical professional organization for the advancement of technology

Aerospace and Electronic Systems Society

Antennas and Propagation Society

Broadcast Technology Society

Circuits and Systems Society

Communications Society

Computational Intelligence Society

Computer Society

Consumer Electronics Society

Control Systems Society

Dielectrics and Electrical Insulation Society

Education Society

Electromagnetic Compatibility Society

Electron Devices Society

Electronics Packaging Society

Engineering in Medicine and Biology Society

Geoscience and Remote Sensing Society

Industrial Electronics Society

Industry Applications Society

Information Theory Society

Instrumentation and Measurement Society

Intelligent Transportation Systems Society

Magnetics Society

Microwave Theory and Techniques Society

Nuclear and Plasma Sciences Society

Oceanic Engineering Society

Photonics Society

Power Electronics Society

Power & Energy Society

Product Safety Engineering Society

Professional Communication Society

Reliability Society

Robotics and Automation Society

Signal Processing Society

Society on Social Implications of Technology

Solid-State Circuits Society

Systems, Man, and Cybernetics Society

Technology and Engineering Management Society

Ultrasonics, Ferroelectrics, and Frequency Control Society

Vehicular Technology Society



Join or view
membership benefits

IEEE Computer Society

IEEE Computer Society is the world's leading organization of computing and information technology professionals with the computing community's primary source for relevant and dependable data. Membership provides access to 33 magazines and transactions, 9,000+ conference publications, 225 international conferences, 3,500 self-paced courses and more.

IEEE TRANSACTIONS ON
VISUALIZATION AND
COMPUTER GRAPHICS

IEEE
Computer Graphics
AND APPLICATIONS

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Computação Gráfica

Introdução

Programação e algoritmos gráficos

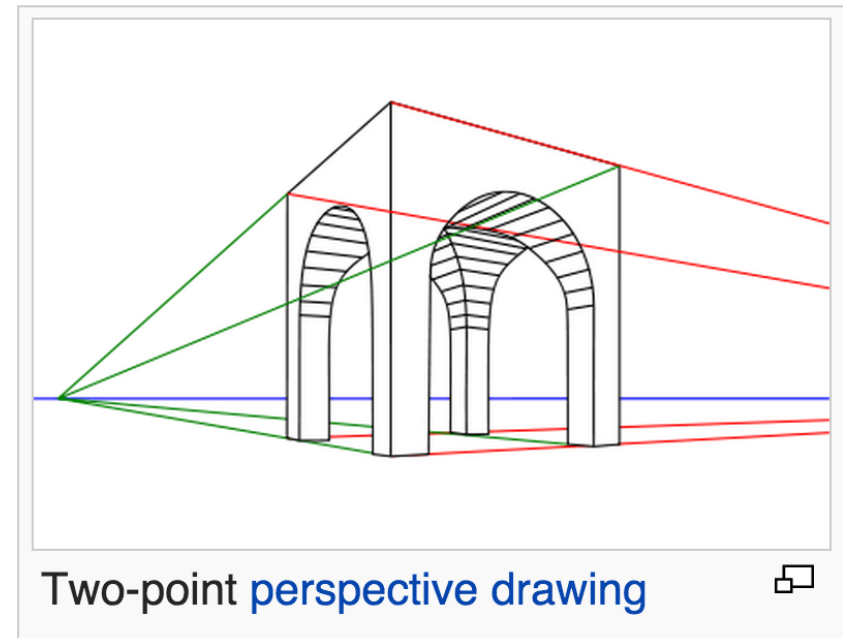
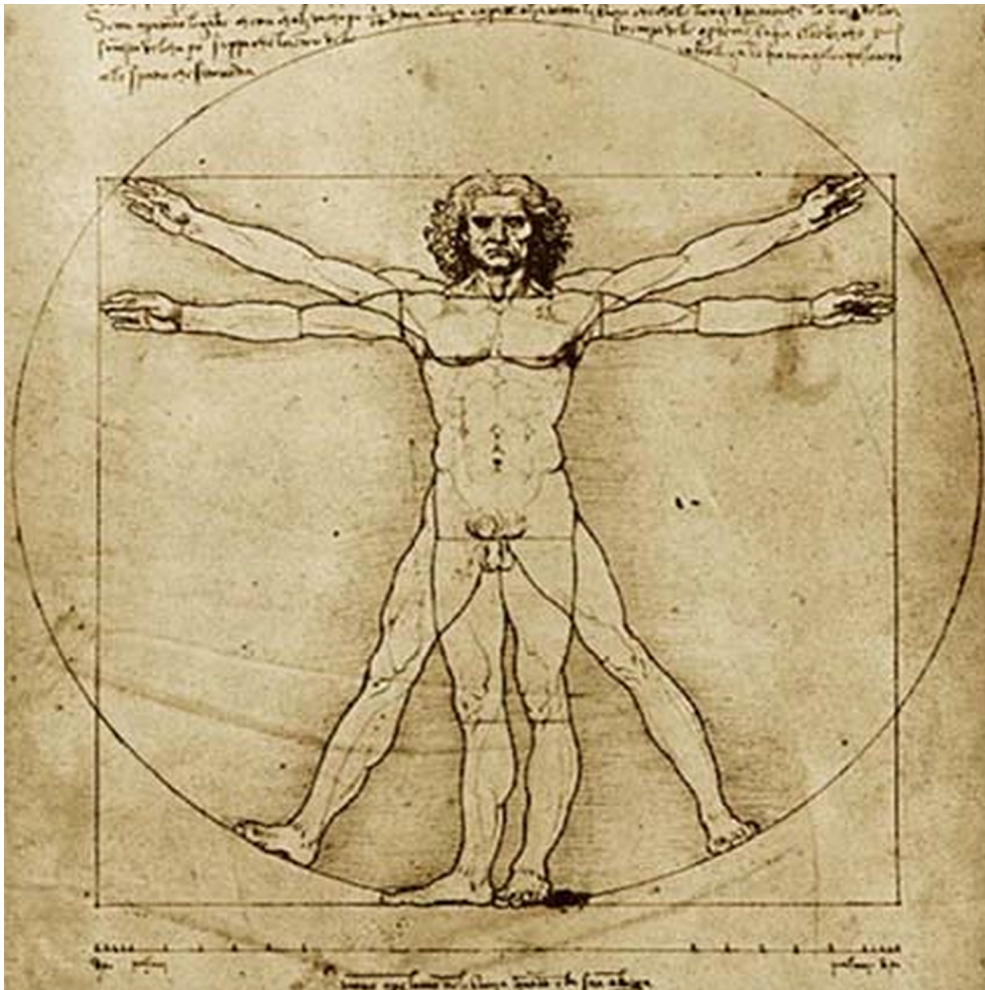
Estruturas de dados gráficas

Visão humana

Geometria, modelamento, “rendering”

Antes da máquina fotográfica e do computador

- Diferentes suportes (pedra, papel, madeira ...) 2D e 3D
- Diferentes técnicas e recursos (sombras, formas e proporções, perspectivas, ...)
- Representações do real e representações do imaginário



Abordagens para a Síntese de Imagens:

Ray-tracing (simulação física)

Pipeline Gráfica

Exercício 1

Em grupo:

- Descreva, em palavras e/ou esquemas, com o maior nível de detalhe que conseguir, no tempo disponível, como você imagina que é o processo que produziu cada uma das imagens seguintes?
- O que é feito por pessoas (usuários, programadores)?
- O que é feito pelo computador?
- Como?

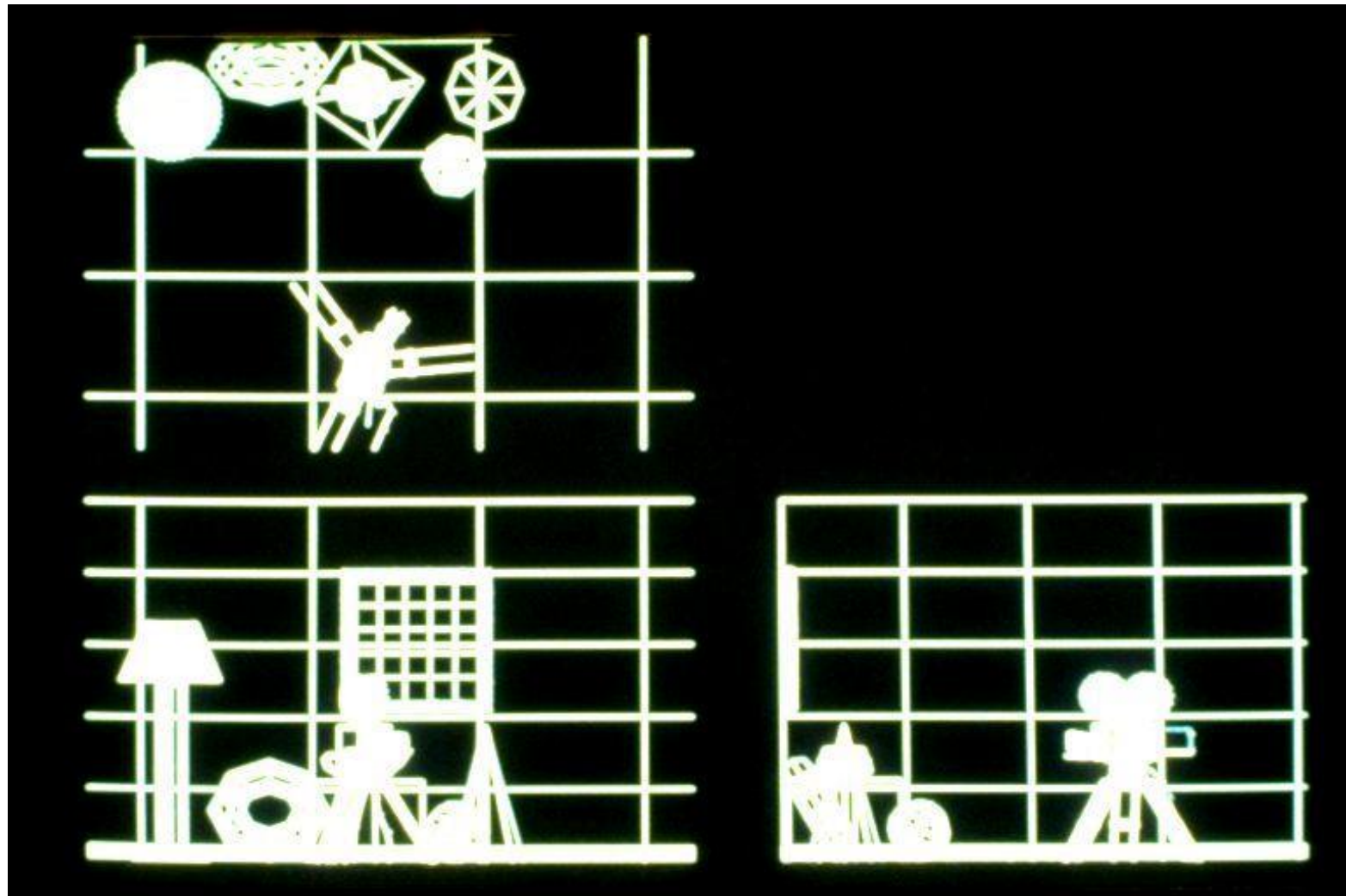
Identifique os integrantes do grupo e faça *upload* no *STOA* da disciplina

Para o Exercício 1 vamos entrar na reunião Zoom

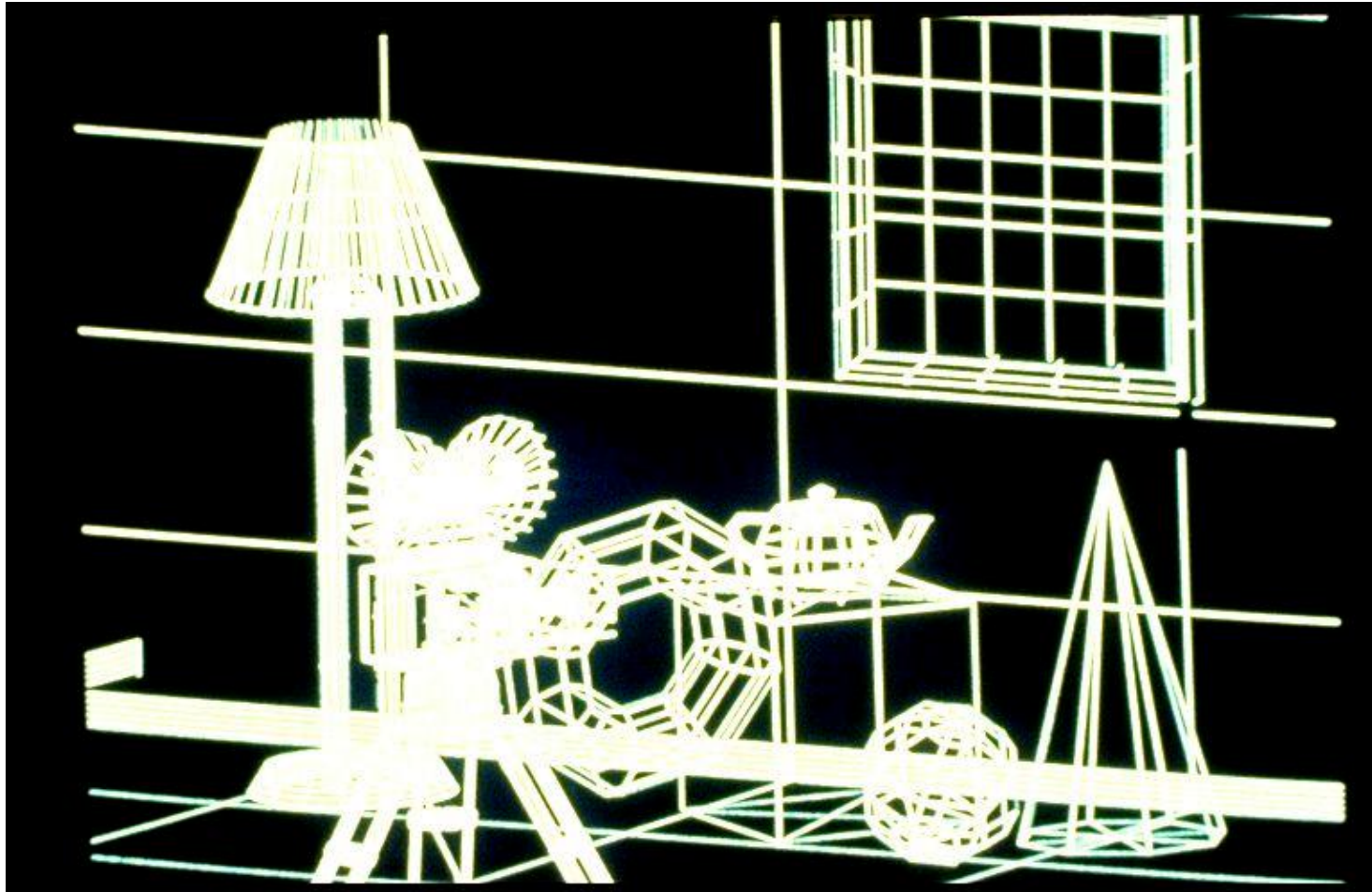
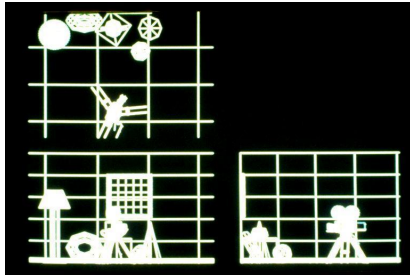
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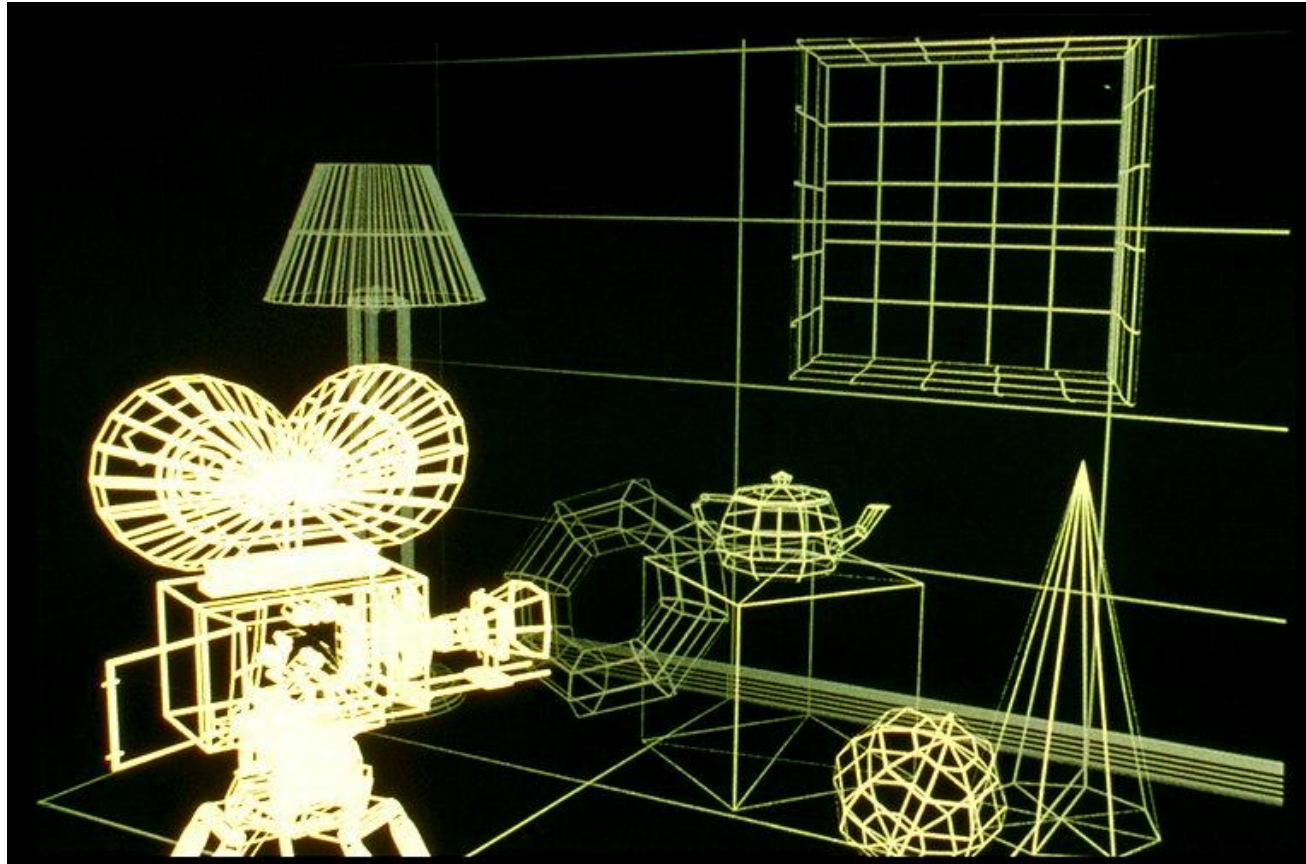
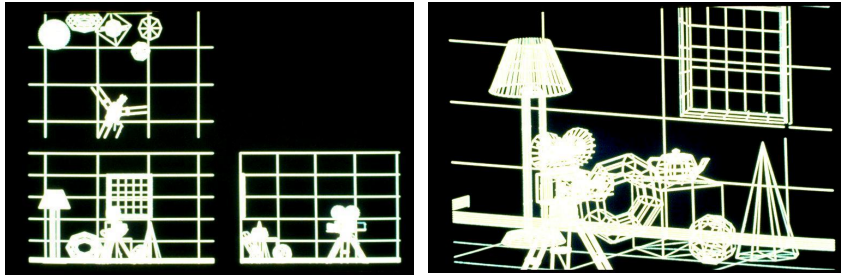
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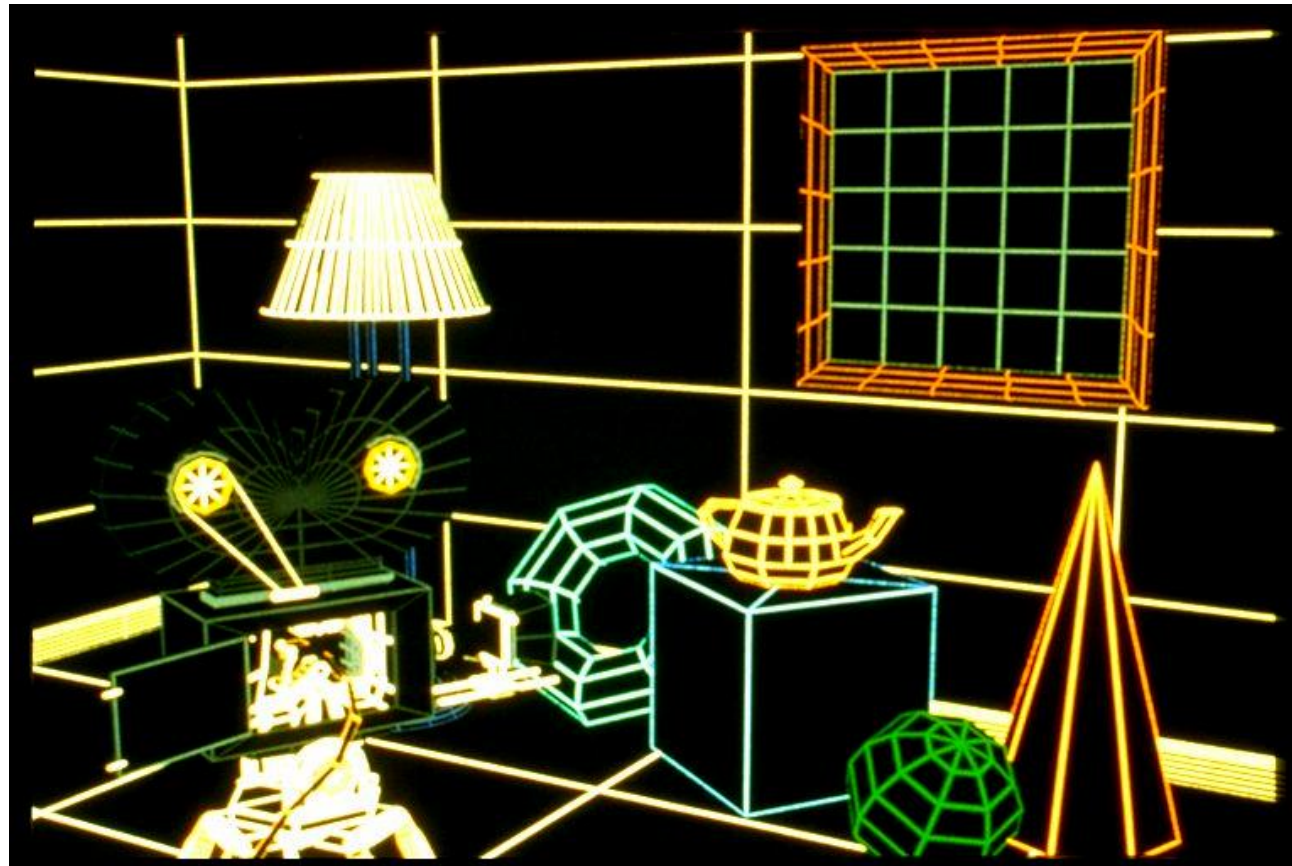
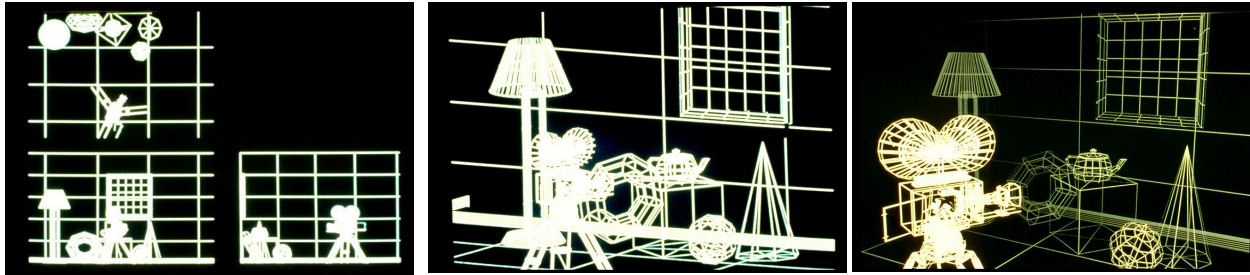
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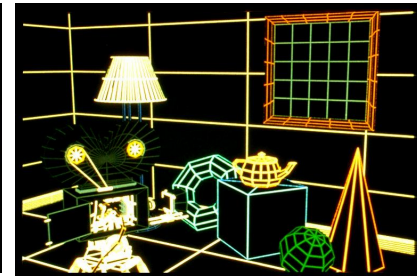
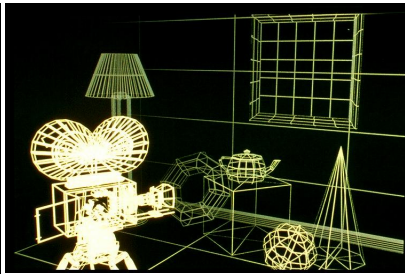
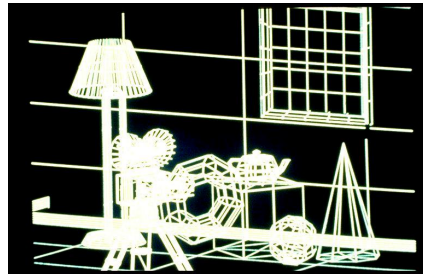
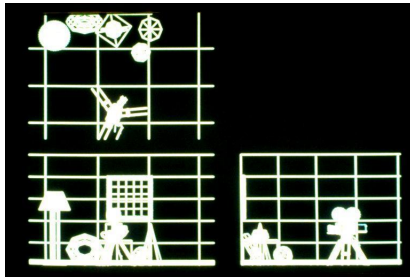


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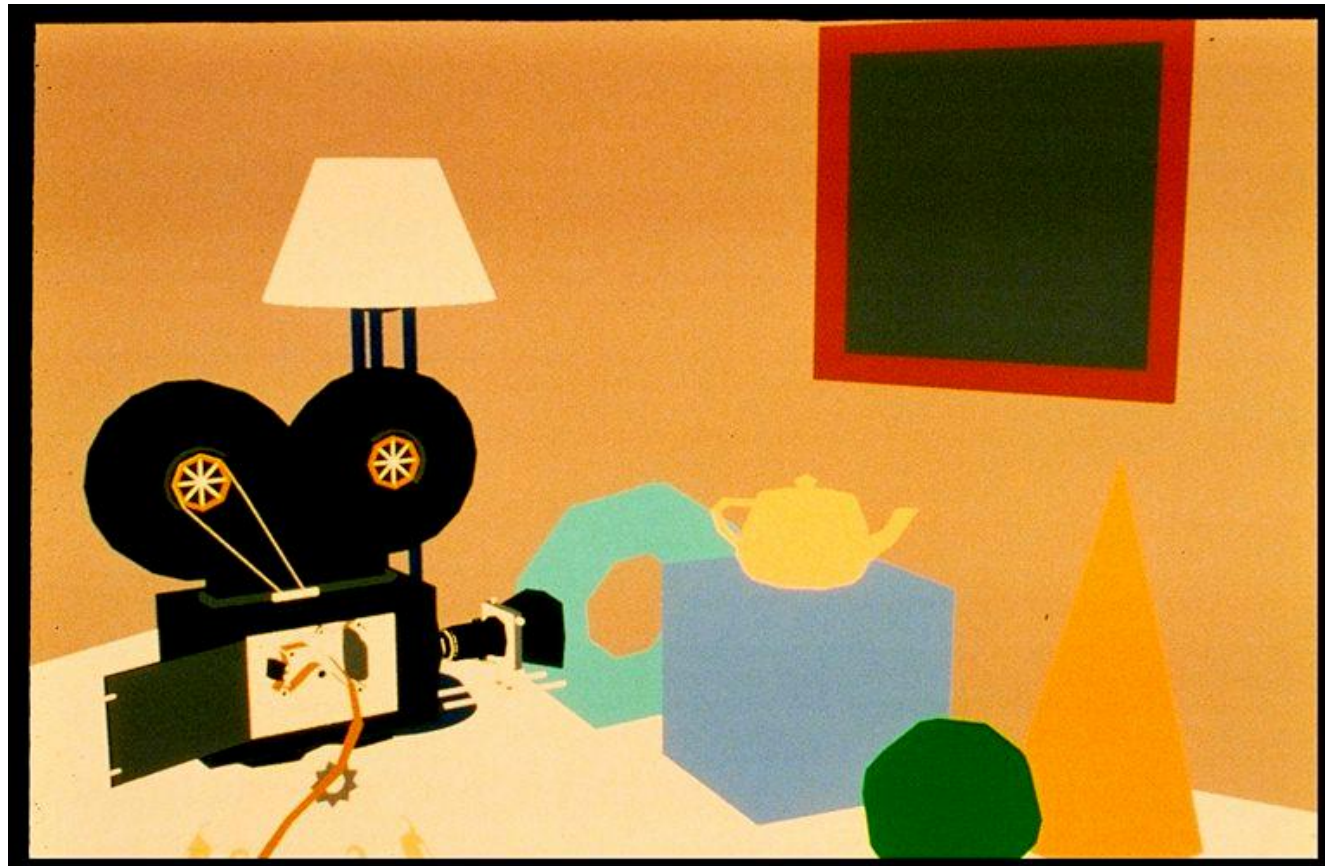


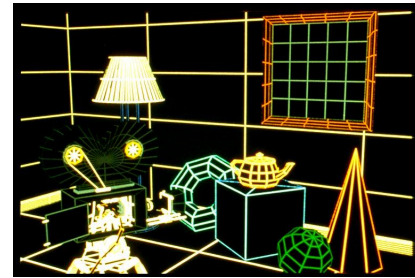
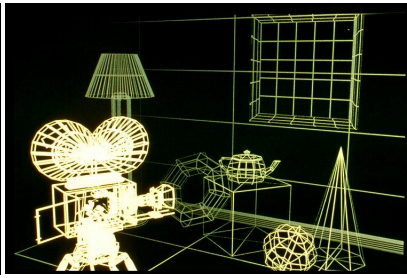
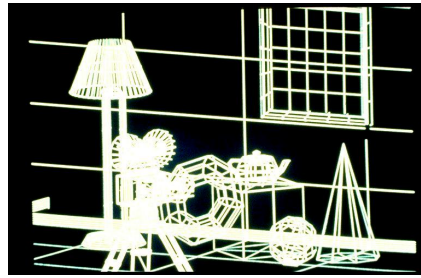
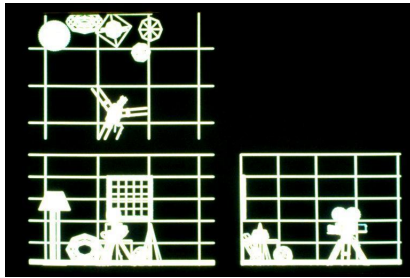
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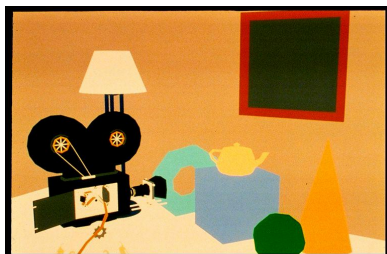
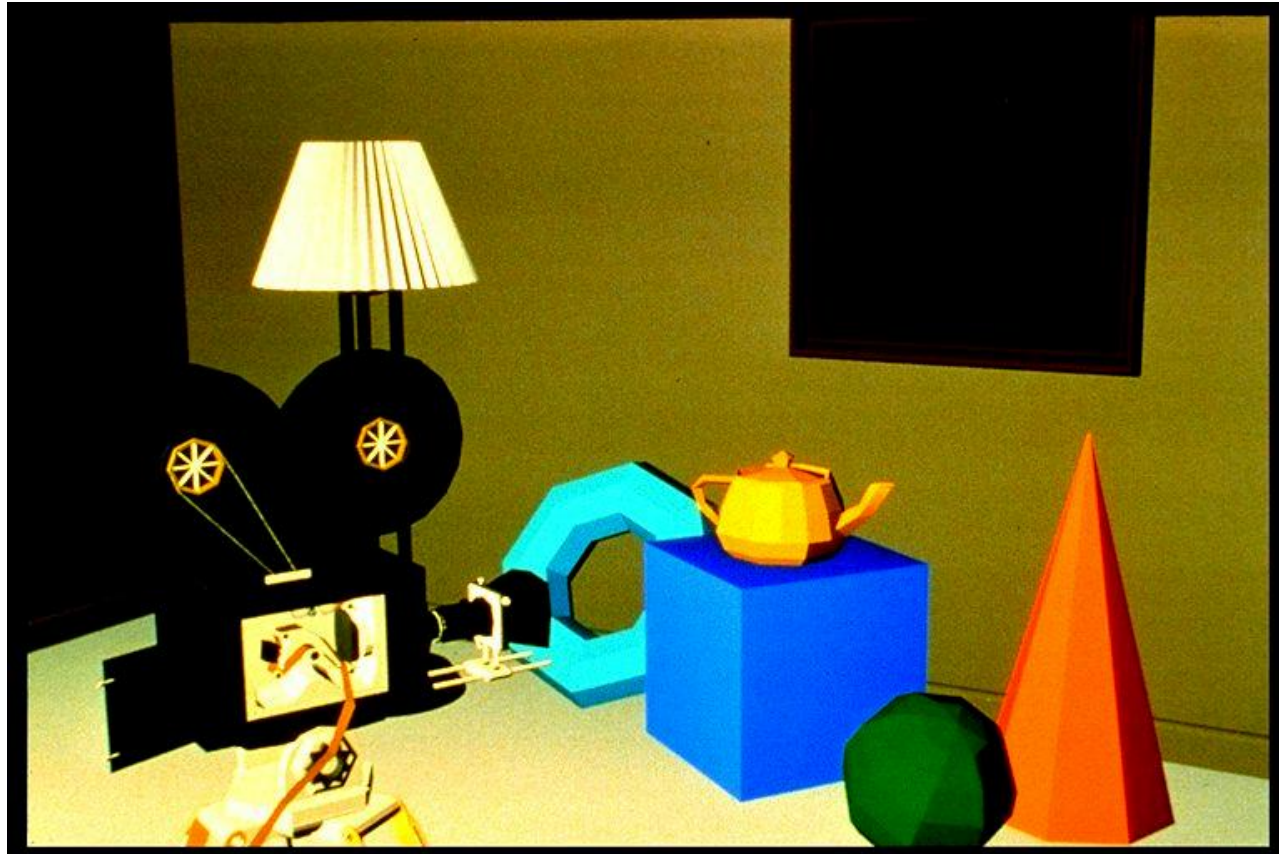


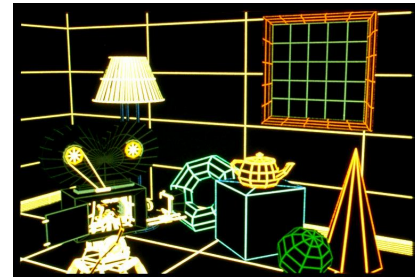
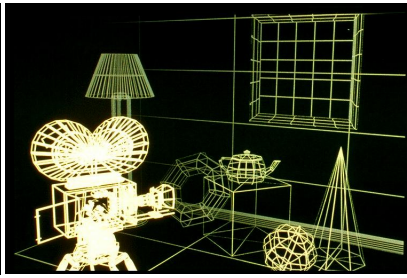
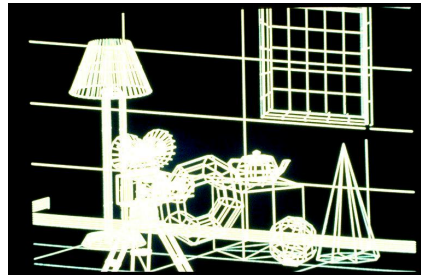
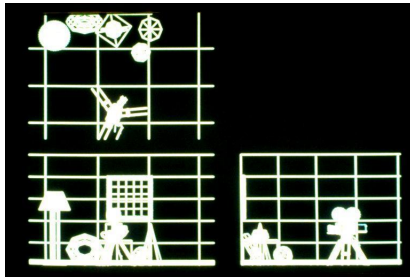
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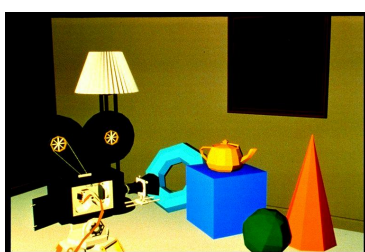
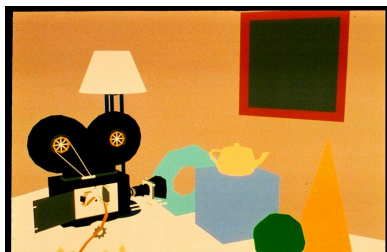
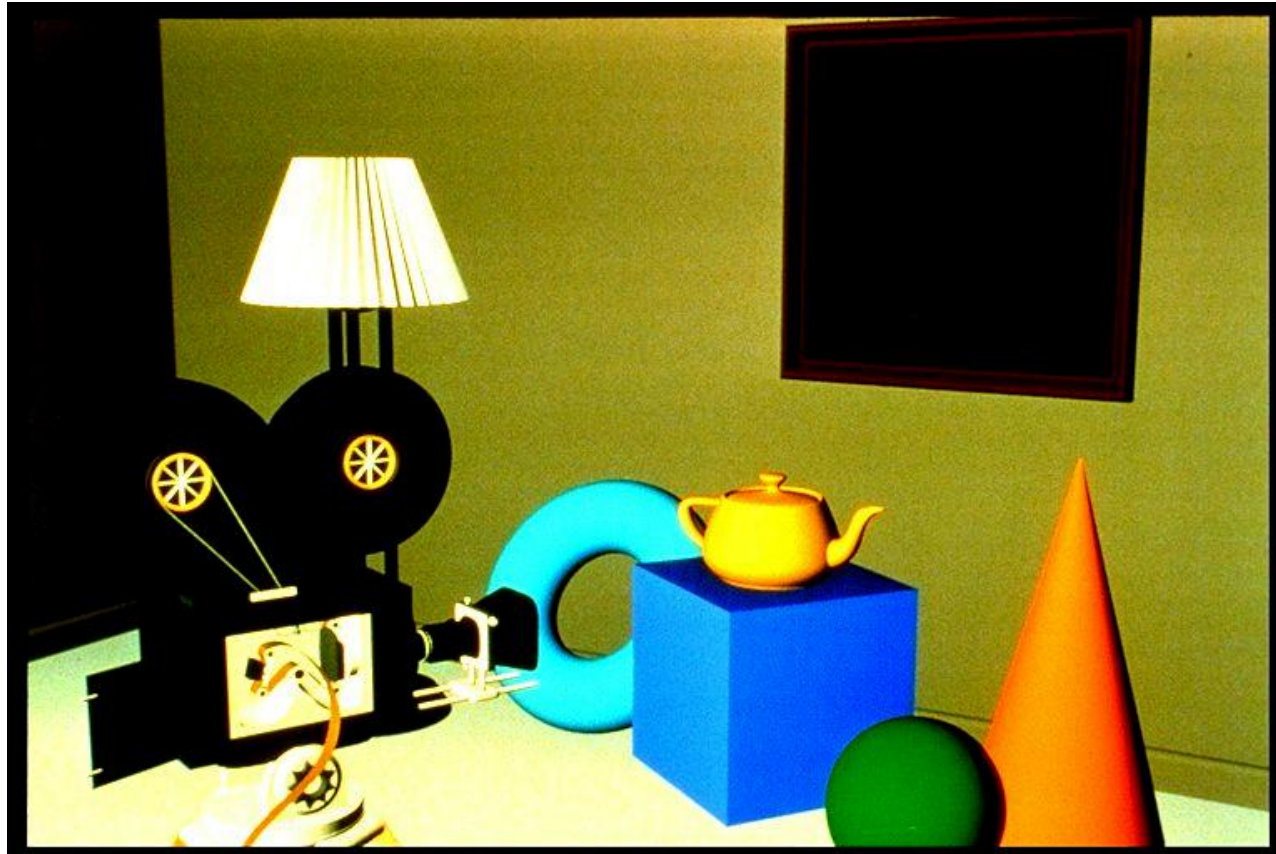


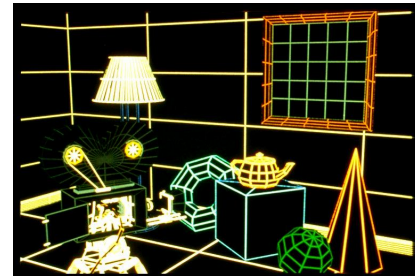
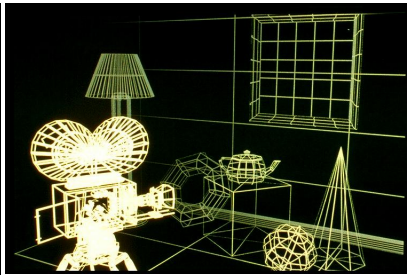
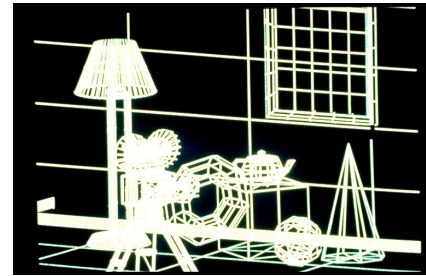
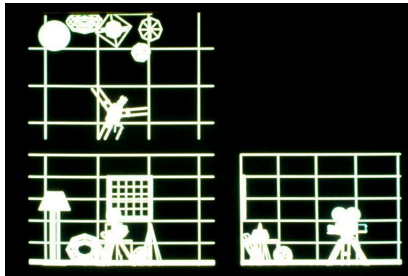
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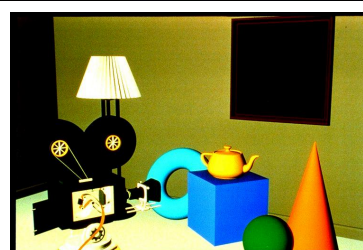
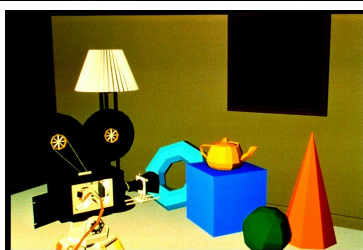
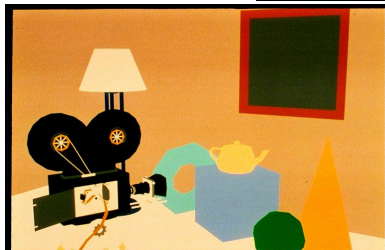
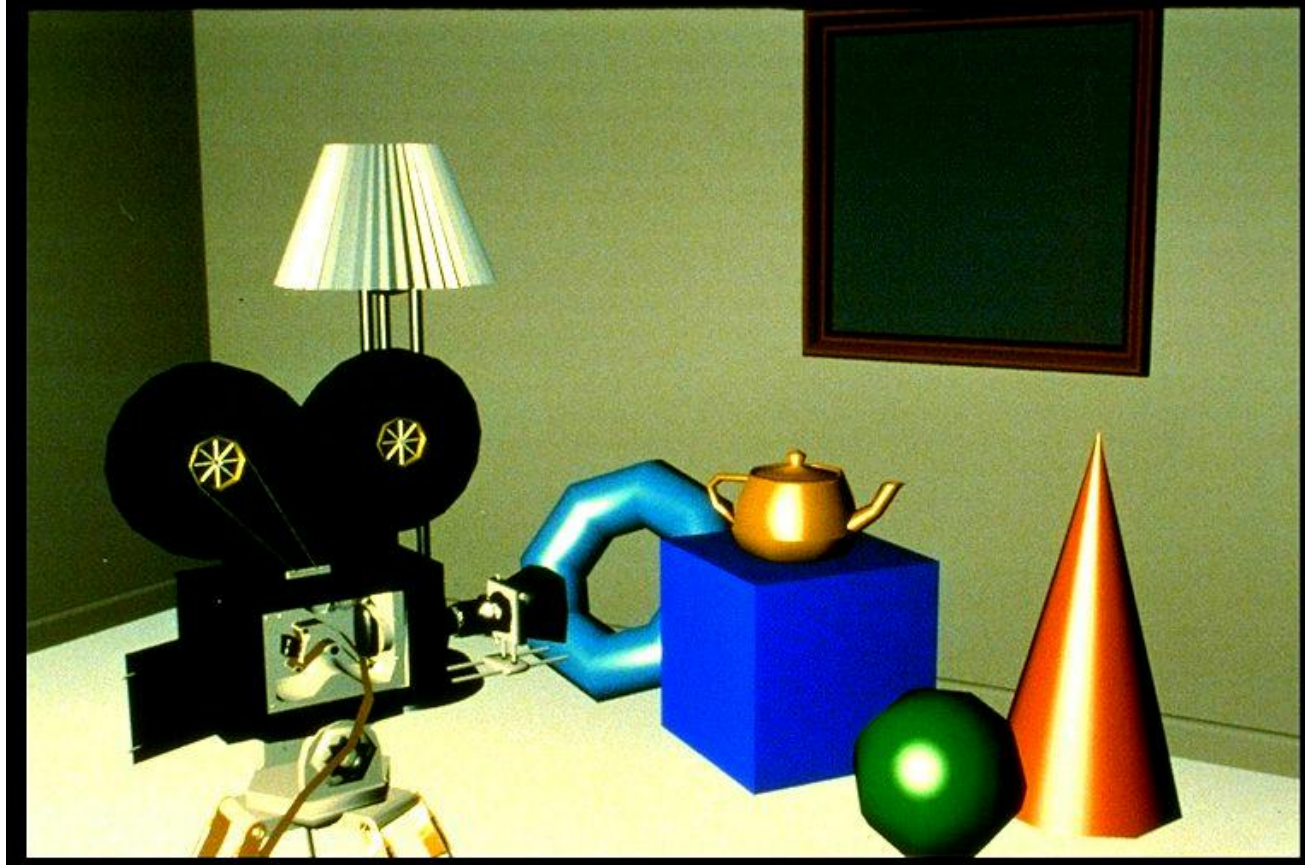


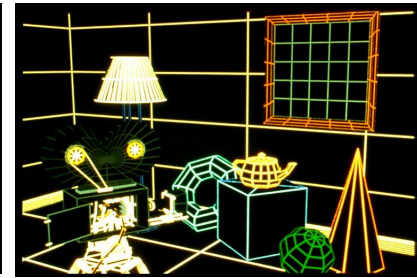
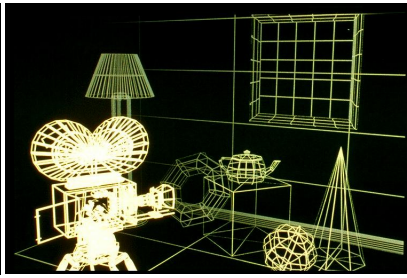
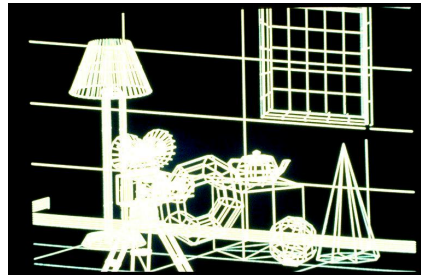
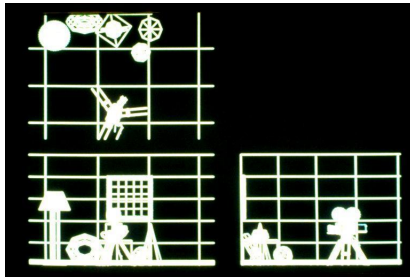
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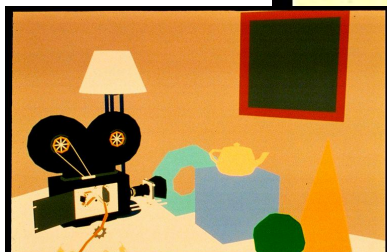
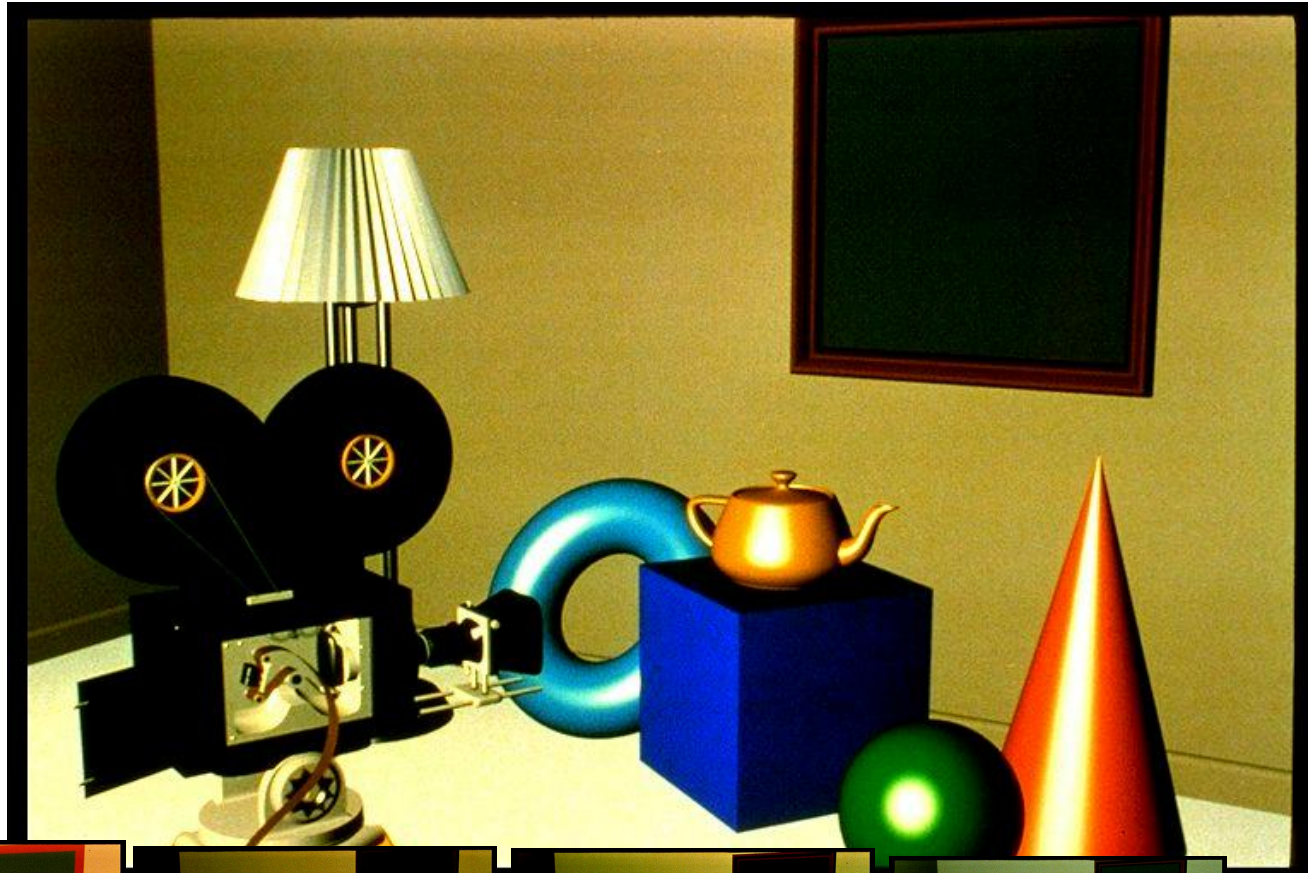


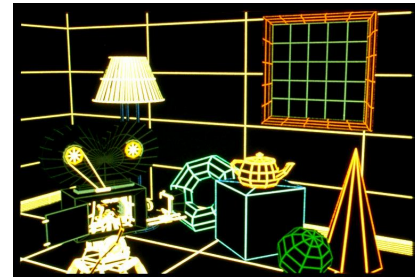
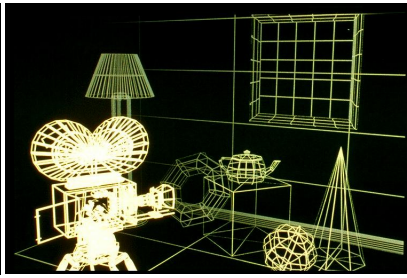
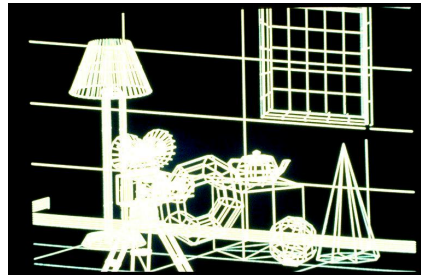
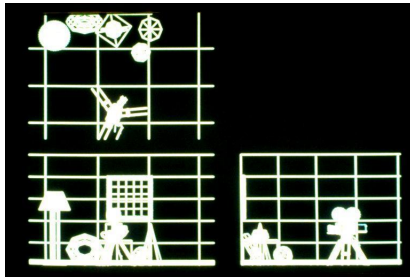
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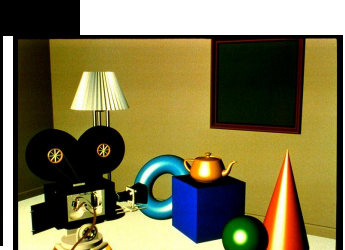


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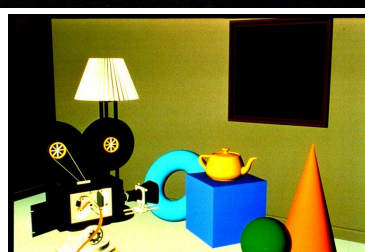
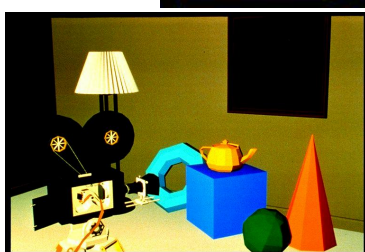
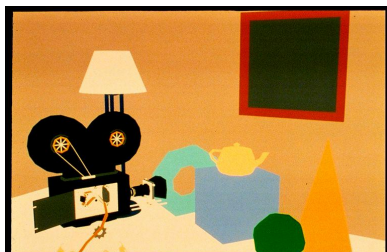
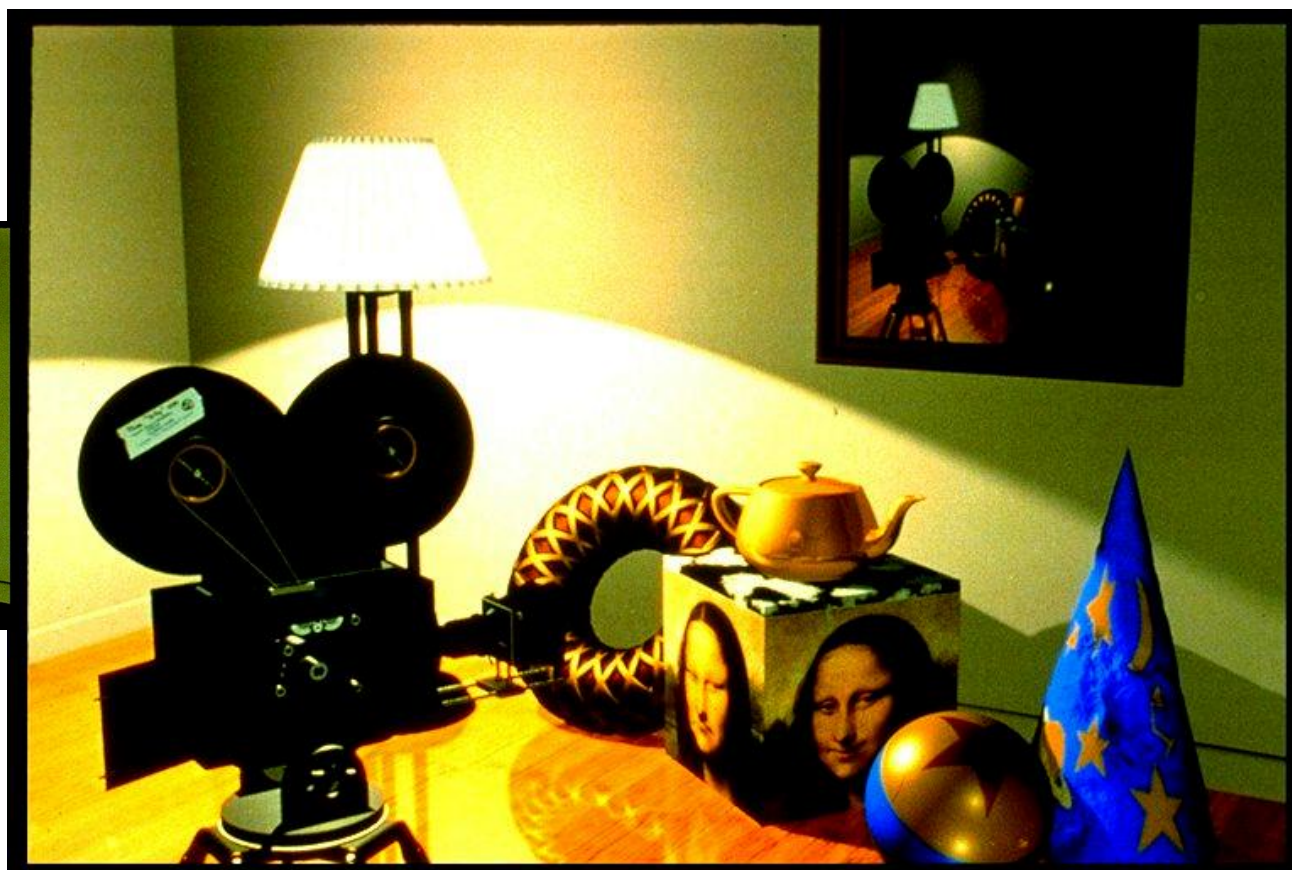
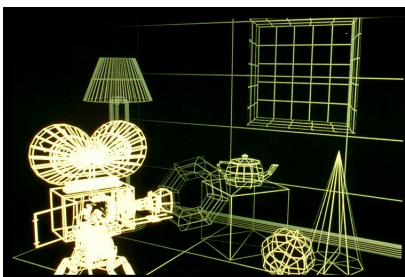
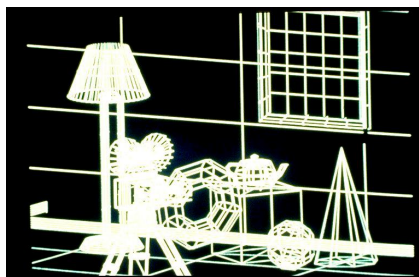
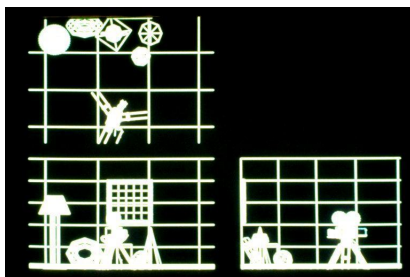
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11



12



Tarefa 1 (individual):

- Fazer navegação exploratória nos sites da ACM e IEEE;
- Explorar os repositórios do IEEE <https://ieeexplore.ieee.org/> e ACM (<https://dl.acm.org/>) e separar pelo menos um artigo interessante para você, que tenha relação com Computação Visual;
- Ler e fazer uma síntese de meia página de um artigo;
- Esteja preparado para, na próxima aula de quinta-feira, falar sobre o artigo para a Turma e também explicar porque escolheu esse artigo (porque achou interessante).

Lembre-se de antes instalar e ativar o recurso de VPN/USP --
<https://www.aguia.usp.br/portfolio/servicos/conexao-remota/>