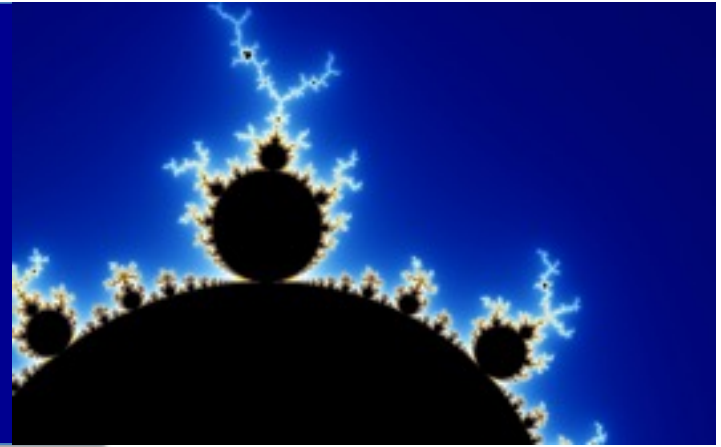
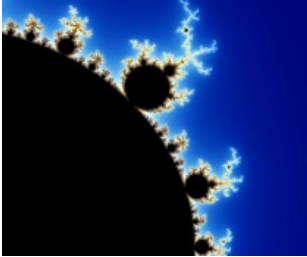


# Computer Graphics



## Chapter 1: Introduction to Computer Graphics

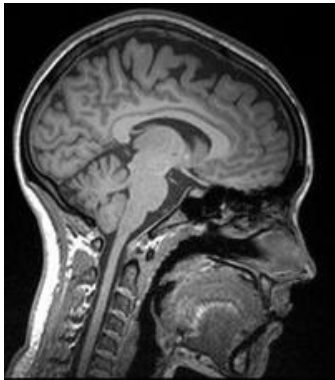


# Class Activity

- My name is ...
- This summer I did .../ I learned .../ I worked at ... /  
I went to ... / I had fun doing ...
- My favorite example of computer graphics is ...
  - Which computer game?
  - Which animated movie?
  - Which display show?
  - Which cool application?

# What are Computer Graphics (CG)?

- Pictures generated by computer
- Examples?



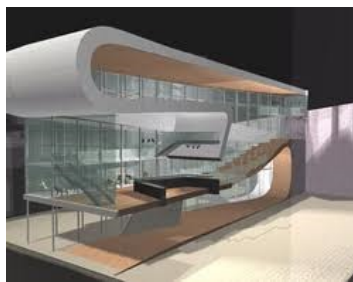
Visualization



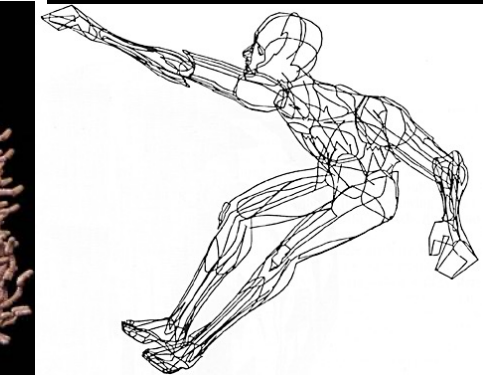
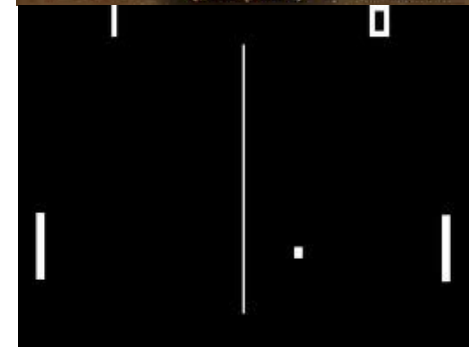
Entertainment



Industrial



Gaming



Art

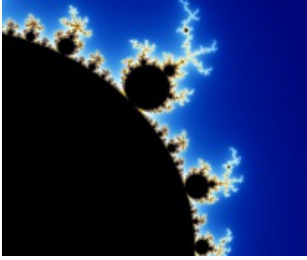




# Real? CGI?



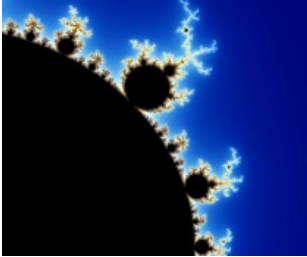




# Real? CGI?



<http://chengbindu.cgsociety.org/art/flower-duchengbin-maya-mental-ray-zbrush-flowers-in-full-bloom-3d-1035525>



# Real? CGI?

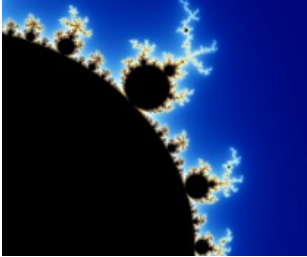


“Ballon Flower’ by Jeff Koons, sold at Christie’s London’s auction for \$25.7 million

# Real? CGI?



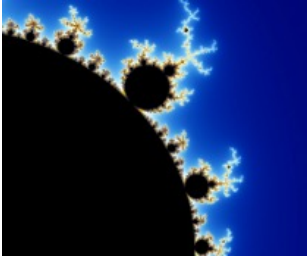
<http://theinspirationgrid.com/hyper-realistic-paintings-by-pedro-campos/>  
*Hyper-Realistic Paintings by Pedro Campos*



# Real? CGI?







# Real? CGI?



*Nathan Sawaya*



# Real? CGI?



*Computer graphics competition at Cgsociety (1<sup>st</sup> place 2013)*

# Real? CGI?



MARCIN GRUSZCZYK

<http://www.lostateminor.com/2013/10/03/mind-blowing-cgi-artwork/airbus-marcin-gruszczyk/>



# Real? CGI?



*Computer graphics competition at Cgsociety (2<sup>nd</sup> place winner 2013)*



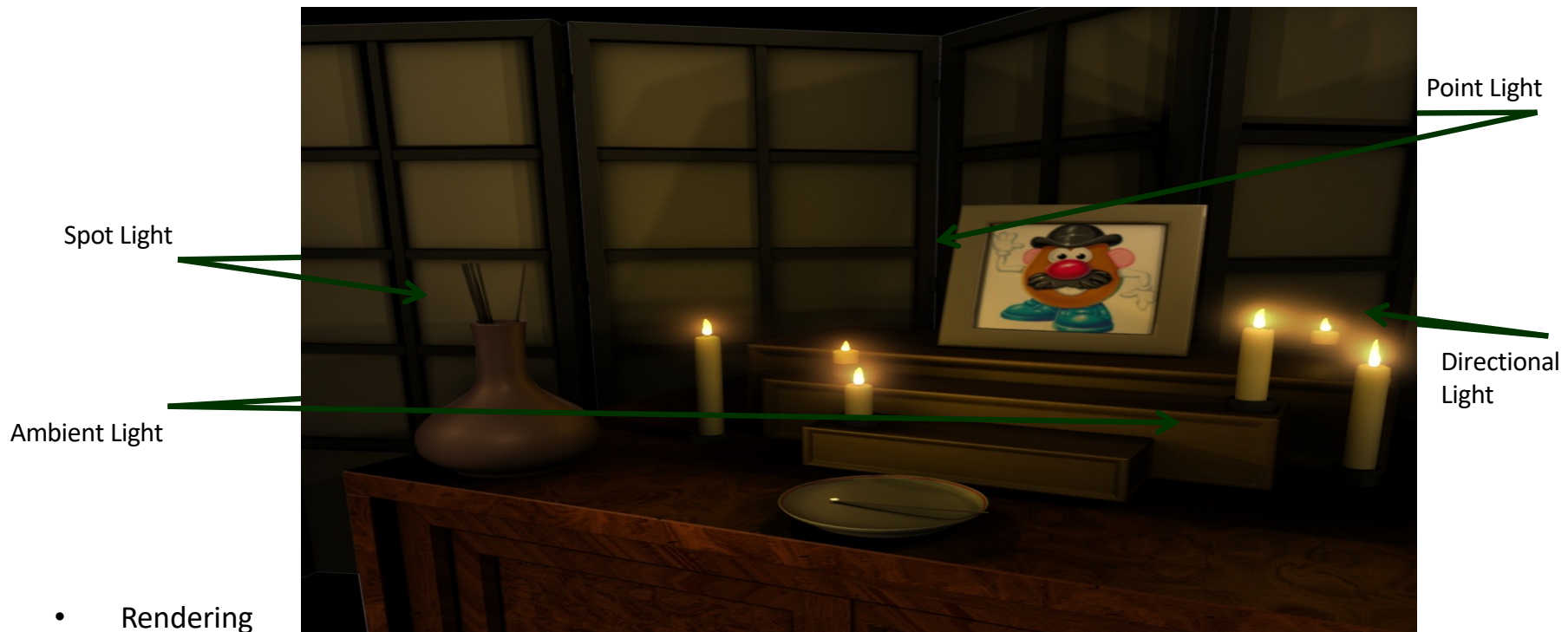


# Graphics Research

- SIGGRAPH (<http://www.siggraph.org>)
  - 2021 Technical Paper Preview Trailer  
<https://www.youtube.com/watch?v=Ros7ZXqLbFg>
  - 2020 Technical Paper Preview Trailer  
[https://www.youtube.com/watch?v=jYdMKdRUq\\_8](https://www.youtube.com/watch?v=jYdMKdRUq_8)
- Computer Graphics Society  
(<http://www.cgsociety.org>)

# Modeling vs. Rendering

- Modeling
  - Create models
  - Apply materials to models
  - Place models around scene
  - Place lights in scene
  - Place the camera



- Rendering
  - Take “picture” with camera



# History of Computer Graphics

- <http://www.youtube.com/watch?v=LzZwiLUVaKg>  
(History of Computer Animation - P1)
  - In what years does Computer Graphics originate?
  - What is the name of the Computer developed at MIT that helps US Navy to calculate trajectory of the rockets?
  - What is the name of the first interactive program developed at MIT?
  - In which year was 3D graphics started?
  - What is the first object the computer scientists used to test various techniques for CGI?