Lecture 20.01.2020

History of Computer Graphics

- tech was first used for military purposes *obviously*
- one of the first games was run on radar equipment to play tennis on a CRT screen
- Vannevar Bush (scientist at Los Alamos) postulated a system similar to our modern internet and inspired many other systems we use today
- *1963:* a scientist that was inspired by Bush was Ivan Sutherland who created a pen used for inputting stuff to a computer ("Light Pen" on "Computer Sketchpad") – first CAD program
- *1968:* "The Mother of All Demos" called this because it showed windows, hypertext, computer graphics, GUI, video conferencing, computer mouse, word processing, collaboration in real time
- *1975:* "The Utah teapot" was the first 3D reference model used in computer graphics
- people got to thinking on how to simulate the real world, lighting, etc.
- *1973:* Phong shading algorithm was one of the first ones that kinda worked
- `Smalltalk` was designed at *Xerox Parc (Palo Alto Research Center)* to make developing GUIs easier and it was the first object oriented programming language
- *1984:* Mac enters the scene and has a lasting influence on computer graphics
- *1984:* Tron was the first movie that heavily used CGI
- *1985:* SGI develops a graphics API that eventually became OpenGL
- *1995:* Toy Story was one of the first entirely computer generated feature films, at that time is was still owned by Steve Jobs

Dedicated graphics chips

- the have a lot more cores
- the cores have less cache or share cache
- the whole architecture is extremely parallel, many pixels can be computed at the same time
- we have clusters of Streaming Multiprocessors which have clusters of cores with their own cache
- CPU designers: Intel, AMD, ARM, IBM, Qualcomm ...
- most assembly for GPU is secretive because it is unique or might be a great advantage
- to interact with the card you have to go through a closed driver which does not reveal any proprietary information
- we have OpenGL, OpenGL ES, Vulkan, DirectX (Direct 3D libraries)