

Lecture 27.01.2020

- vectors are very useful for computers and computer graphics
- in computer graphics 3D and 4D vectors are very common
- vectors encode direction and magnitude of something, anything really
- there are many representations: scalars generally italicized x and vectors generally in bold \mathbf{a} or mathematically as \vec{a}
- vectors can also encode RGBA values
- geometric definition of a vector is an arrow pointing somewhere
- the zero vector does not have a magnitude nor a direction
- $-\vec{a} = \{-x, -y, -z\}$, multiply by scalar by multiplying all the elements by the same amount etc.
- for vector addition or subtraction, just add or subtract all the elements to/from their corresponding elements in the other vector
- we also have unit vectors and how to find the length of the vector
- we have the dot product for stuff
- then matrices are the holy grail of rotations and vector operations