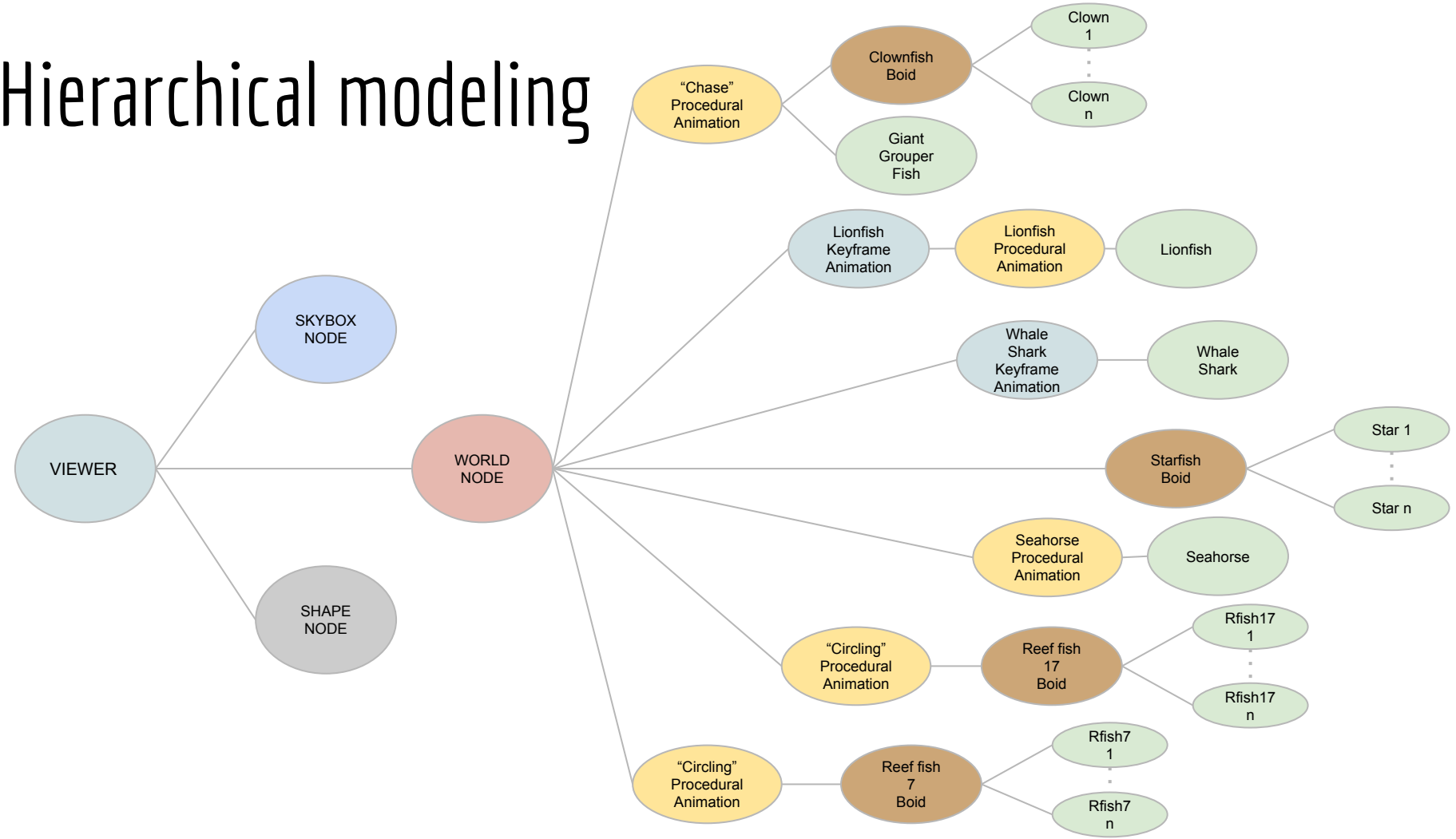
Atlantis

Karthik Subramanyam Chakka
Oleksandr Firsov
Christopher Hunt

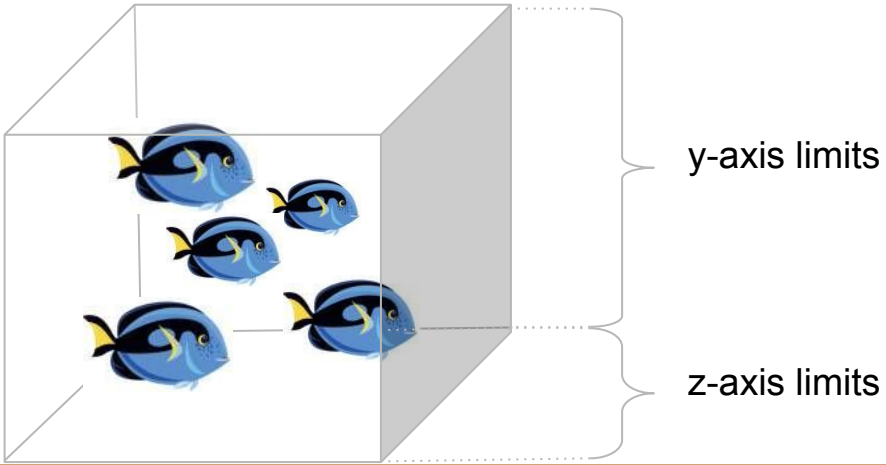

Modeling

Hierarchical modeling



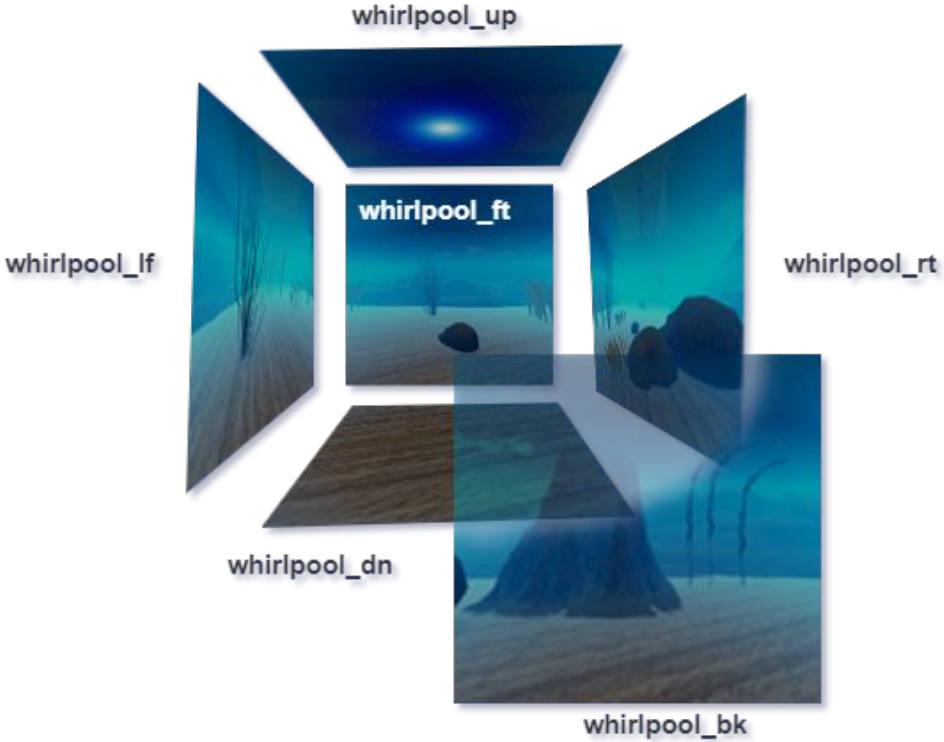
Creating simple boids

- Generation of a basic boid:
  - for i 1 -> n:
    - Generate random number within the bounds defined for all x, y, z
    - Create a node with fish
    - Translate the fish at the above generated position

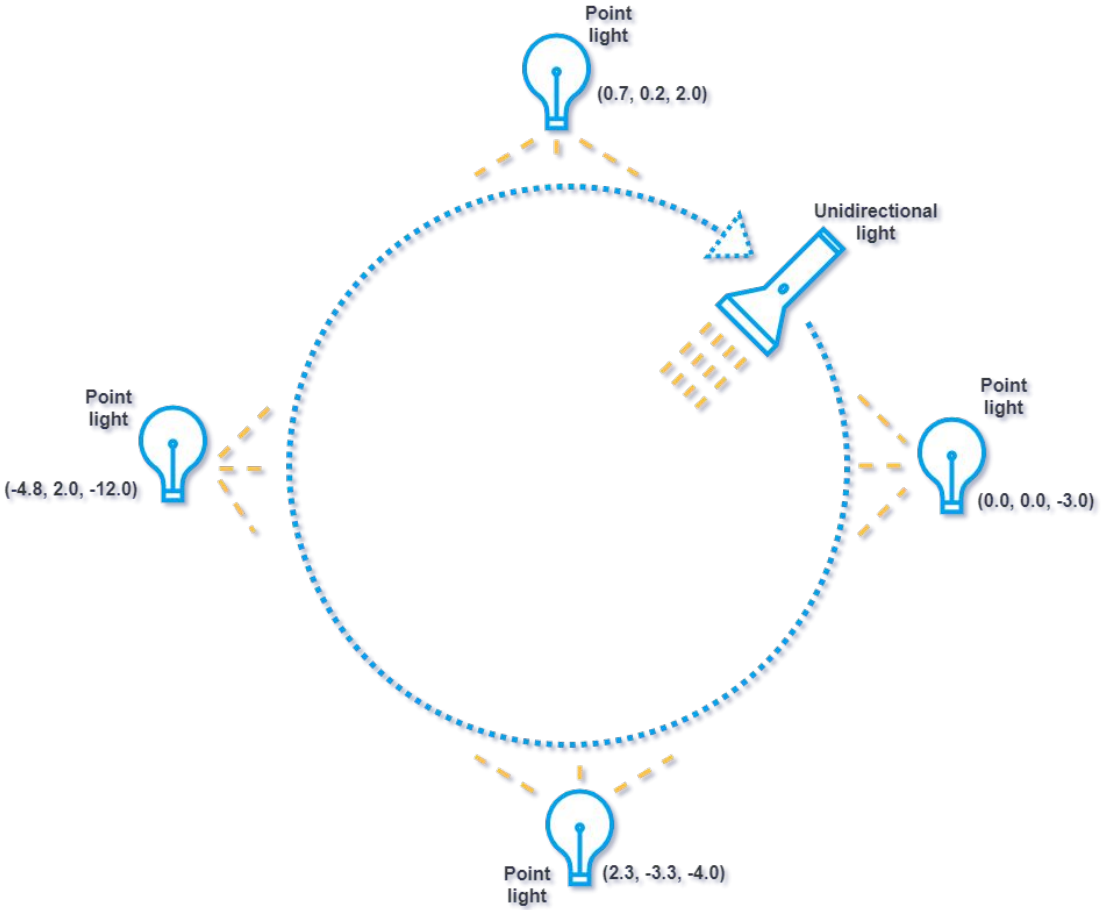



Rendering

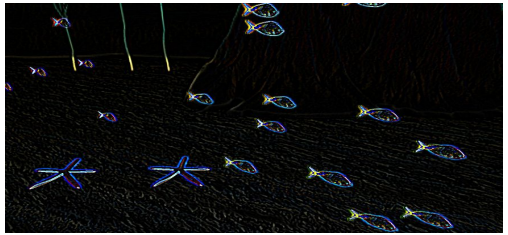
Skybox


whirlpool_up
whirlpool_lf
whirlpool_ft
whirlpool_rt
whirlpool_dn
whirlpool_bk

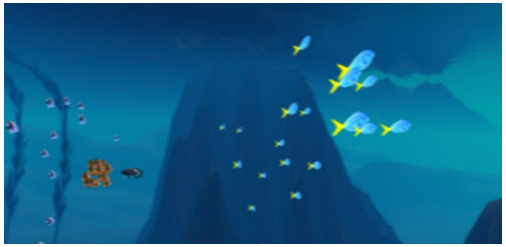
Lighting


Point light
(0.7, 0.2, 2.0)
Unidirectional light
Point light
(-4.8, 2.0, -12.0)
Point light
(0.0, 0.0, -3.0)
Point light
(2.3, -3.3, -4.0)

Effects & Filters

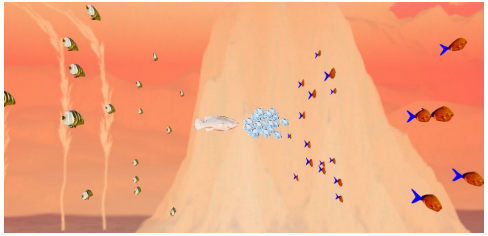


Edge detection

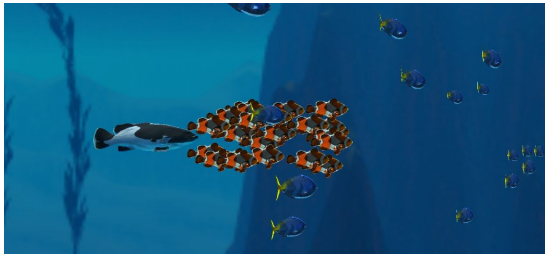


Gaussian blur

Sharpening



Inverted



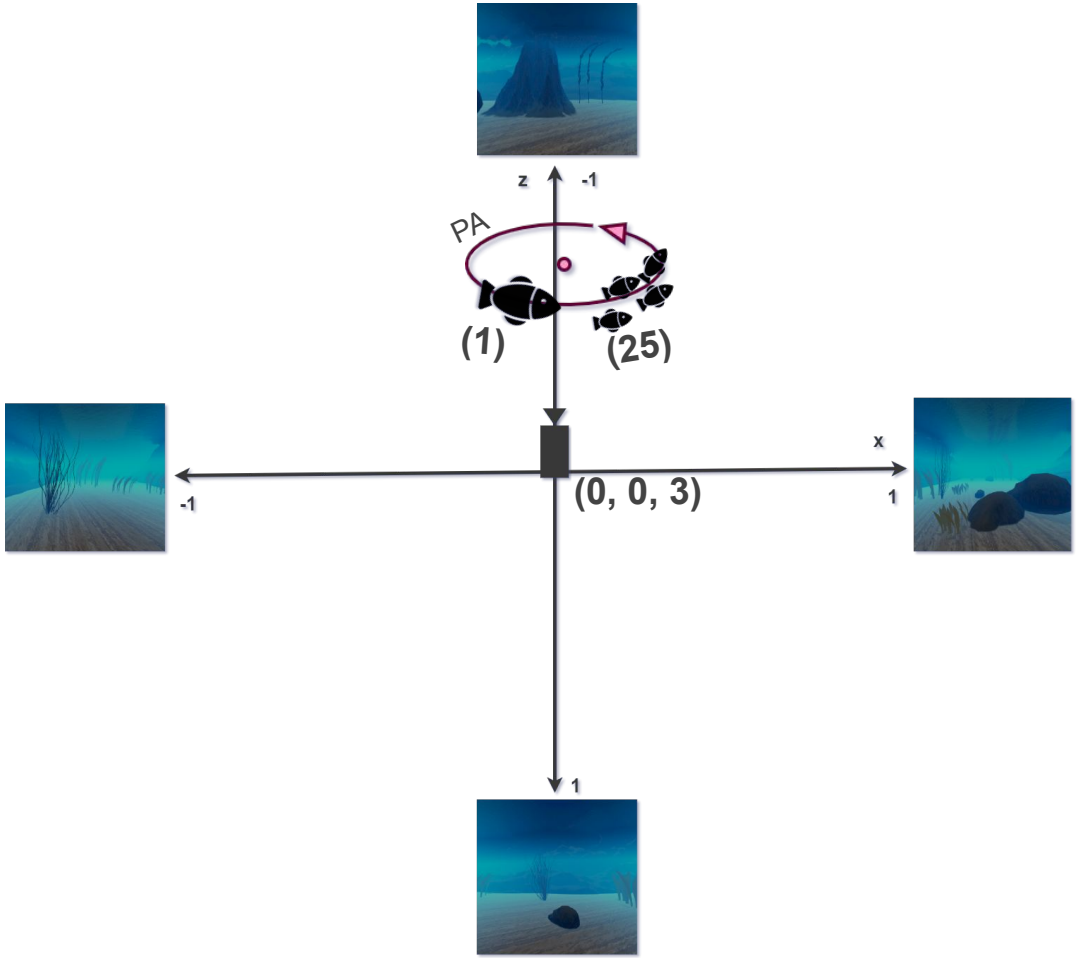
Normal

Grayscale

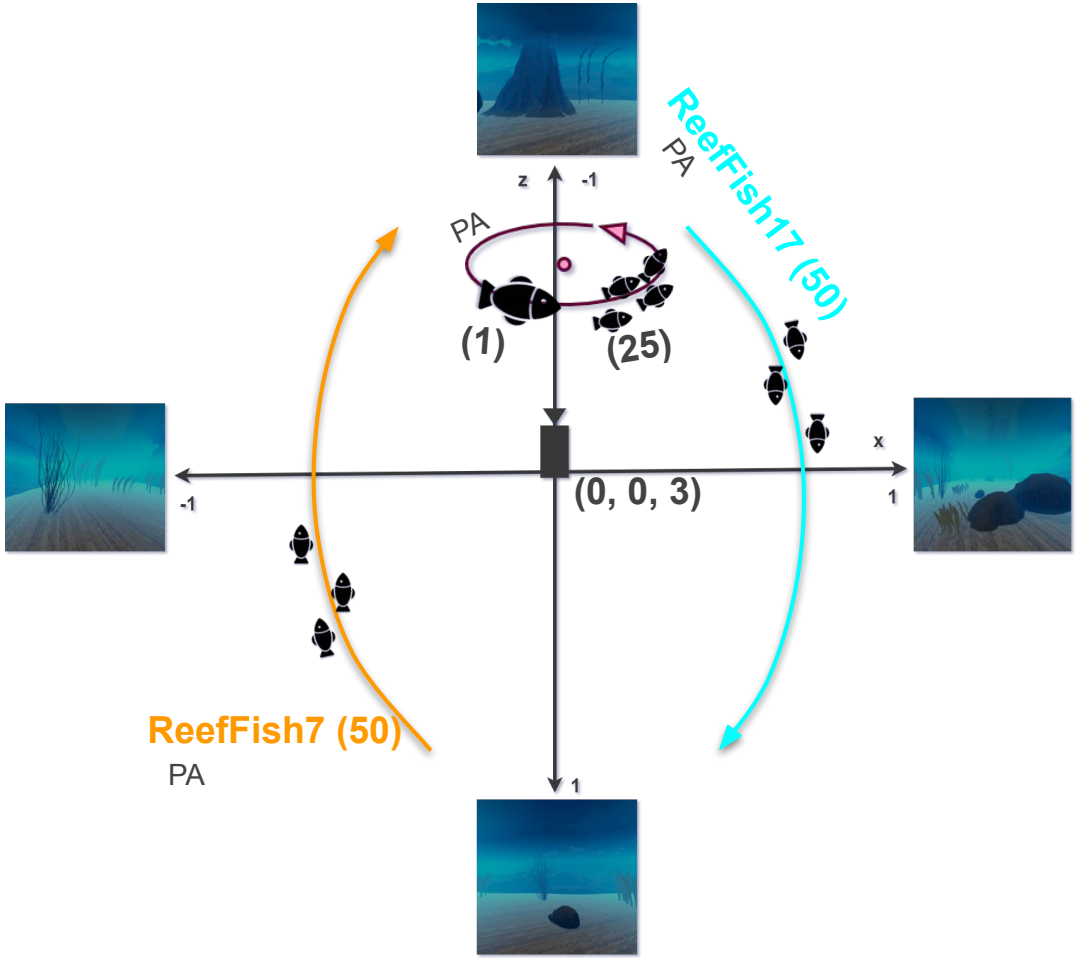
Also exposure and “underwater” camera effect


Animation

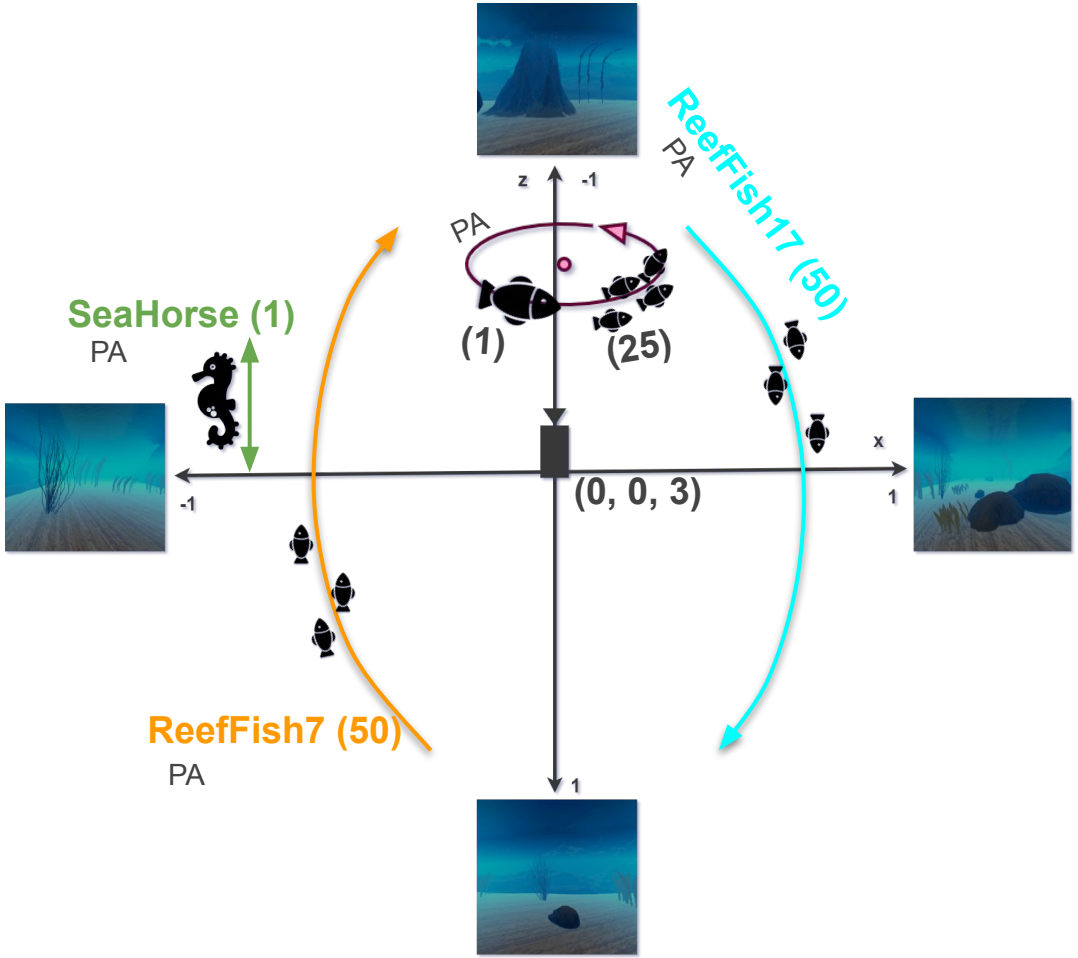
Animation



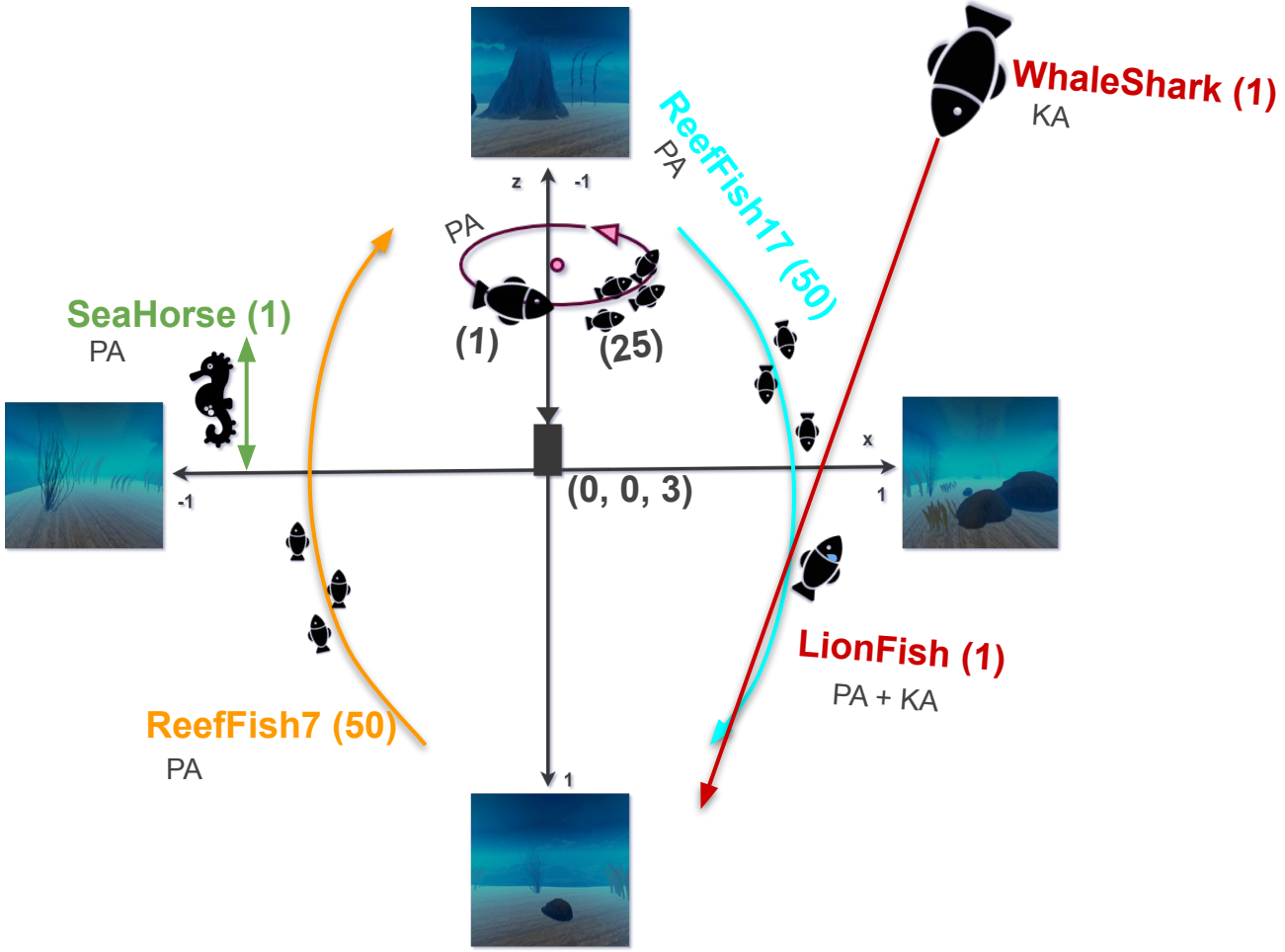
Animation



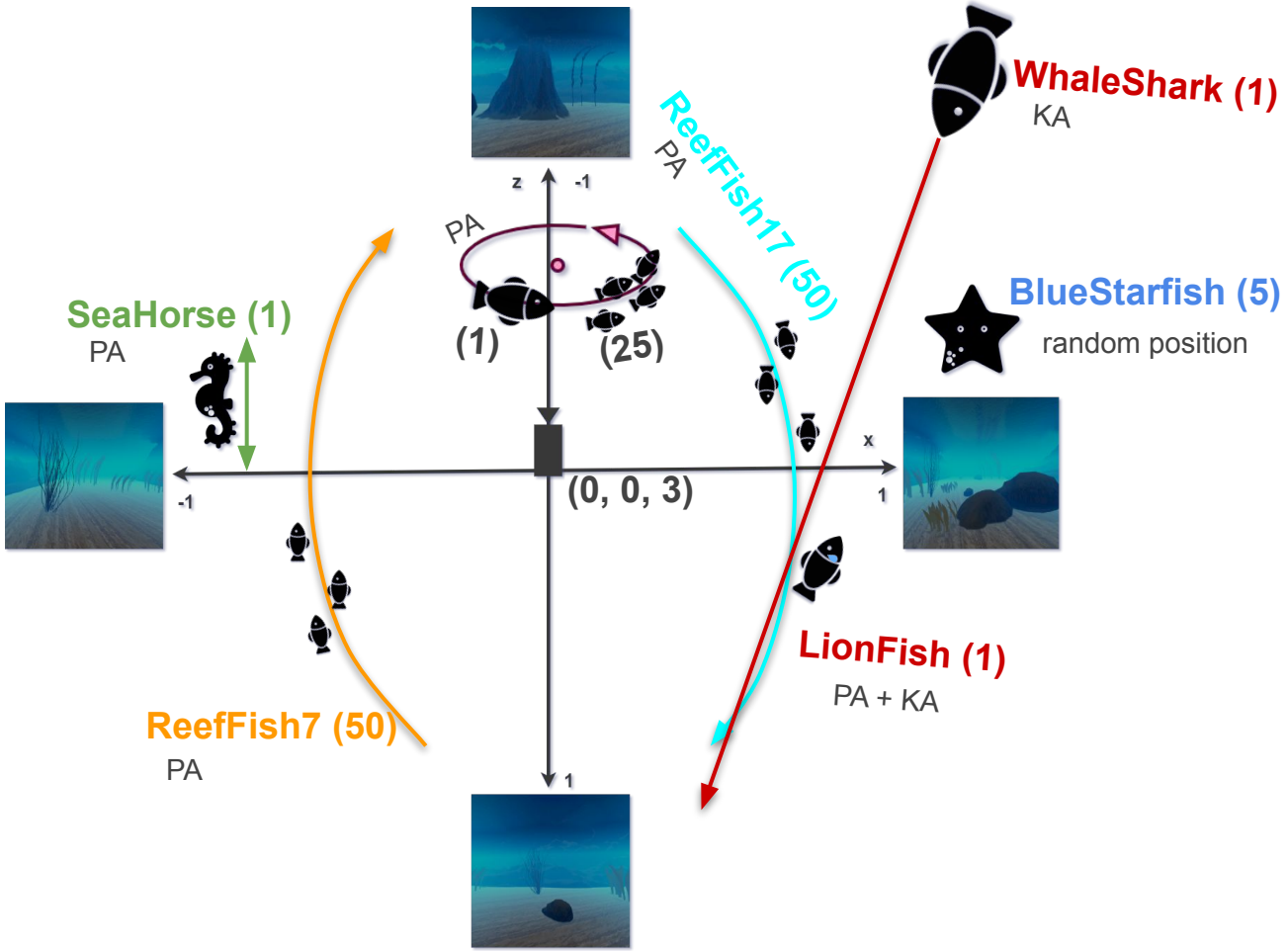
Animation


z
-1
1
x
-1
1
PA
(1)
(25)
SeaHorse (1)
PA
ReefFish17 (50)
PA
ReefFish7 (50)
PA
(0, 0, 3)

Animation


WhaleShark (1)
KA
ReefFish17 (50)
PA
z
-1
PA
(1)
(25)
SeaHorse (1)
PA
x
-1
(0, 0, 3)
1
LionFish (1)
PA + KA
ReefFish7 (50)
PA
1

Animation


WhaleShark (1)
KA
ReefFish17 (50)
PA
BlueStarfish (5)
random position
SeaHorse (1)
PA
PA
(1)
(25)
z
-1
1
x
-1
1
(0, 0, 3)
LionFish (1)
PA + KA
ReefFish7 (50)
PA

Animation

- **Floating Motion:**
  - y: sin(time)
- **Circular Motion:**
  - Angle: time % 360
  - x: r * cos(angle)
  - y: r * (sin(angle) + cos(angle))
  - Z: r * sin(angle)
- **Keyframe Motion:**
  - Translation keys (used to make whaleshark attack lionfish)
  - Rotation keys
  - Scaling keys (used to make lionfish “disappear”)

Thank you for your attention!