

# Swarm Behaviour & Environments

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## IDEA AND CONCEPT:

Inspired by Daniel Cavolis work with simulated swarm behaviour this project works with a similar implementation of algorithmic behaviour based on three weights: Separation, alignment and cohesion. (Craig Reynolds - Boids)

The Scene contains around 300 individual agents moving and interacting with each other according to these rules.

The parameters of each agent can be adjusted to simulate different behaviour.

The user can step up to the interactive space of the piece and interact with the swarm in a shared space. Interaction is enabled by reaching towards the screen with your hands. Active hands in the tracking space switch aspects of the visible scene. Touching on the similarities between different species cluster behaviour and making use of the possibilities of virtual spaces the environments and animals are interchangeable. Depending on the users behaviour while interacting with the swarm certain reactions can be triggered.

## EXHIBITION AND TECH:

Ideally the work would be displayed in a display box made of wood and transparent canvas. Alternatively it could be set up as a window to a room showing the swarm occupying real space.

A 3d stereoscopic display is used to create further depth and hand tracking required for interaction is captured by a Leap Motion Sensor.

Unity 2021.1 with HDRP and Ultraleap.

