

Spike Outcome Report

Number: 08

Spike Title: Emergent Group Behaviour

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Goals:

Create a hunter-prey agent simulation for two or more agents, in which "prey" agents avoid "hunter" agents by concealing themselves behind objects in the environment. The simulation must:

- Include several "objects" that prey can hide behind (simple circles).
- Show a distinction between the "hunter" and "prey" agent appearance and abilities.
- Show an indicator ("x" or similar) to indicate suitable "hide" locations for prey to select from
- Prey agents must select a "good" location, and head to it, based on tactical evaluation.

Note: leave instructions on how to use your code (keys to use) with your code / report.

KEYS: Press A to add more hiding agents

Technologies, Tools, and Resources used:

Sublime Text 3

Lecture on Autonomously Moving Agents

Files from Spike 07

Tasks undertaken:

- * Read lecture on Autonomously Moving Agents
- * Read goals for Spike
- * Make certain you are familiar with the files from lab 07
- * Remove unnecessary functions and other code from the files (things that do not directly relate to behaviours necessary such as wandering and arriving)
- * Create a class for the objects that will be used to hide behind
- * The object must initialise and must have a render function
- * Create several of the objects in the main function
- * Initialise a hunter in world.py with different attributes to the normal agents. The hunter should be set to wander
- * Make a function that determines the hiding spots for a hunter in a particular frame, this function can be in world.py
- * The function should use normalise to determine this
- * Create another function that determines the "best" hiding spot by determining which of the hiding spots is furthest away from the hunter.
- * Now create a hide function in agent, which will be what the agent is doing
- * Determine where the best hiding spot is and have the agent arrive at the hiding spot
- * If there is no best hiding spot, set the agent to flee
- * Test!

What we found out:

- * How to use normalise
- * How to make an agent hide from another agent

Recommendations [Optional]:

- * Work on multiple hunters later
- * Has increased confidence and knowledge for the team