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Advanced Tools | Evaluation Proposal

**AI learns to climb/bouldering**

Agent is placed in a boulder climbing hall. Has 2 arms and 2 legs. Lose points for every time they go outside the starting zone on the floor (or stay there for too long), and the simulation starts over. Gain points for grabbing a climbing point and not touching the floor.

Parameters:

* Amount of climbing points. Correlates with the size of the climbing area.
* Arm strength vs leg strength vs balance between both.
* Time the agent is allowed to rest?

Proposal sentence:

“Implement Deep Q-Networks in Unity on a machine learning agent to enable it to learn ‘bouldering’, on walls of increasing difficulty with different parameters for samples (attempts to reach the top), and compare the times the top of the walls has been reached for each difficulty with the total amount of samples for that difficulty, with different parameter values.”

**AI learns to avoid bullets – Bullet Hell**

Get points for every second not getting hit. Lose points for every bullet that did hit. Simulation ends when health <= 0. Should eventually learn to find cover.

Parameters: move speed, amount of cover points.

**AI plays The Floor is Lava**

Parameters:

* Amount of coins
* Lava appearance speed
* Move speed
* Jump height

Implement Deep Q-Network (?) on a “the floor is lava game” in Unity and let it survive for as long as possible and getting as many coins as possible with different parameters for samples (game simulations played) and move speed vs jump height, coin worth, lava area size, and compare the different results with their respective parameters.

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