F20RO Robotics Coursework

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# Introduction

Blah blah blah

# Task 1 Methods & Implementation Rationale

Blah blah blah

# Task 1 Results & Analysis

Blah blah blah

# Task 2 Methods & Implementation Rationale

Blah blah blah

The fitness functions in the controller specify fitness changes based around moving forward, spinning, moving backwards, and avoiding obstacles. Moving forward with any speed for both motors gives a +2 fitness, to discourage spinning on the spot of slamming backwards into walls, which itself is punished with backwardsFitness. Spinning on the spot in either direction, detected by both wheels moving in opposite directions at any speeds, nets a -2 to the fitness.

[avoiding obstacles fitness]

The supervisor is used to provide reward incentives based on the ePuck’s final location, both with a general gradient value for any x/z-value and for specific reward values for being in certain “zones”. The ePuck remaining in the starting “zone” gives a flat -3 fitness, to try to encourage exploration and further discourage spinning or running into a corner, and +3 for being in the top 1/3 of the maze. For the sideways paths, if a hint is detected it’ll reward for being on the right, and vice versa for when no hint detected.

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# Task 2 Results & Analysis

Blah blah blah

# Discussion & Conclusion

Blah blah blah

# References

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