Multiagent Coordination in Roombas: From a Neural Network Perspective

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***Abstract*—The abstract goes here.**

I. Introduction

II. Related Works

A. Coordinated Multiagent Reinforcement Learning

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[2]
[3]
[4]
[5]

B. Coordinated Multiagent Neuroevolution

III. Problem Formulation

A. Structure of Roomba Environment

Add description of Roomba module here...

B. Multiagent Behaviors

C. Difficulties and Challenges

IV. Implementation

A. Reinforcement Learning

Add implementation details of Q-Learning and variants here...

B. Neuroevolution

Add implementation details of Neuroevolution here...

V. Results

A. Greedy Strategy

B. Planning Strategy

C. Multiagent Strategy

VI. Conclusions

The conclusion goes here.
Future Works go here.

References

[1] D. T. Nguyen, W. Yeoh, H. C. Lau, S. Zilberstein, and C. Zhang, "Decentralized multi-agent reinforcement learning in average-reward dynamic dcops," in *Proceedings of the 2014 international conference on Autonomous agents and multi-agent systems*. International Foundation for Autonomous Agents and Multiagent Systems, 2014, pp. 1341–1342.
[2] C. Zhang and V. R. Lesser, "Coordinated multi-agent reinforcement learning in networked distributed pomdps." in *AAAI*, 2011.
[3] C. Zhang and V. Lesser, "Coordinating multi-agent reinforcement learning with limited communication," in *Proceedings of the 2013 international conference on Autonomous agents and multi-agent systems*. International Foundation for Autonomous Agents and Multiagent Systems, 2013, pp. 1101–1108.
[4] B. Banerjee, J. Lyle, L. Kraemer, and R. Yellamraju, "Sample bounded distributed reinforcement learning for decentralized pomdps." in *AAAI*, 2012.
[5] L. Kraemer and B. Banerjee, "Informed initial policies for learning in dec-pomdps." in *AAAI*, 2012.