



Joint RL meeting

Andrea Pierré

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Brown University

Outline

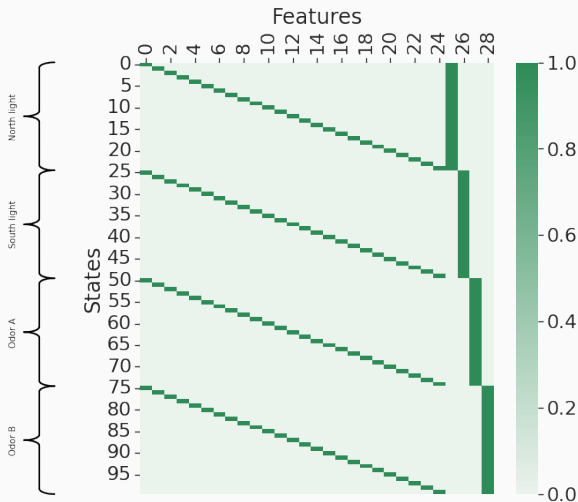
1. Reducing the number of features in function approximation
2. Deep Reinforcement Learning – first draft

Outline

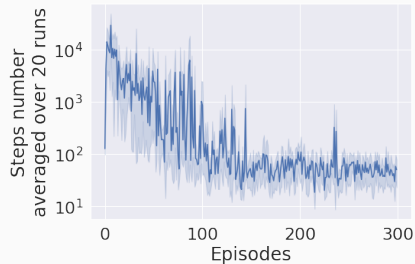
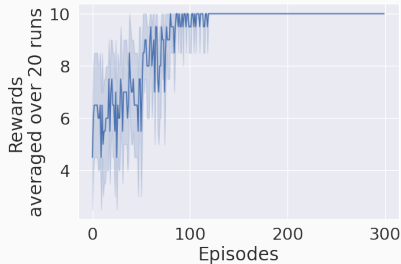
1. Reducing the number of features in function approximation
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Features matrix – allocentric agent

→ Reduced from 100 to 25 locations + 4 cues

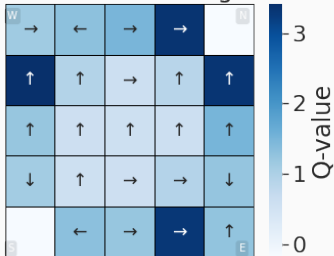


Rewards and steps – allocentric agent

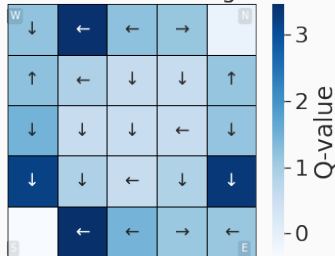


Q-values learned – allocentric agent

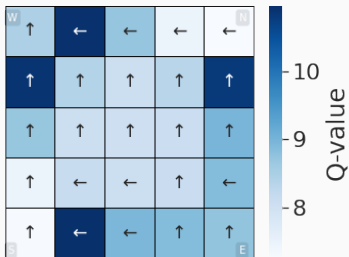
Pre odor - North light



Pre odor - South light



Post odor - Odor A

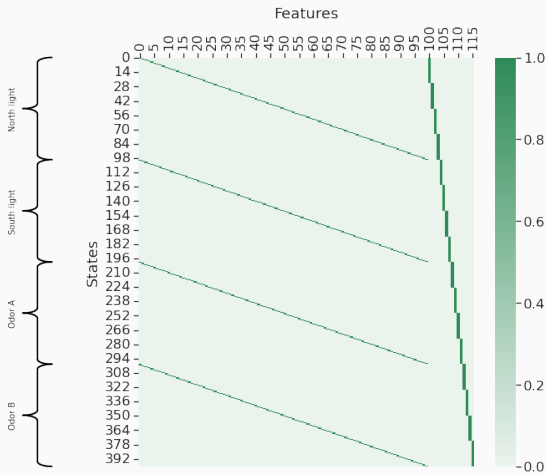


Post odor - Odor B

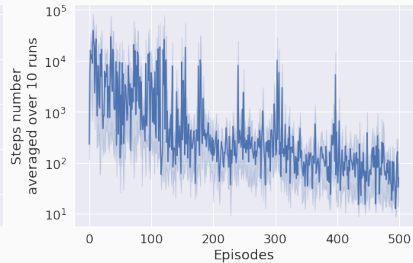
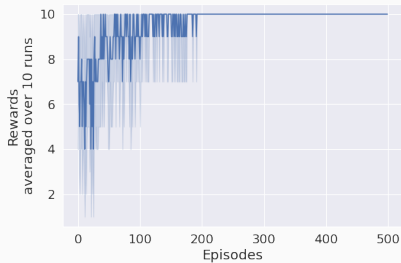


Features matrix – egocentric agent

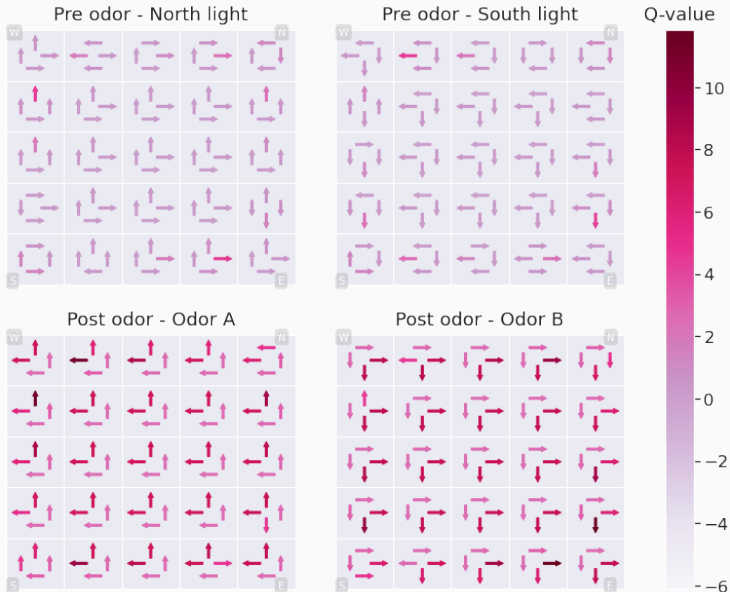
→ Reduced from 400 to 100 locations (25 locations x 4 head directions) + 16 cues (4 cues x 4 head directions)



Rewards and steps – egocentric agent



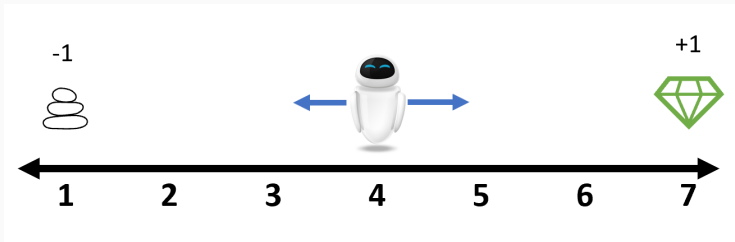
Q-values learned – egocentric agent



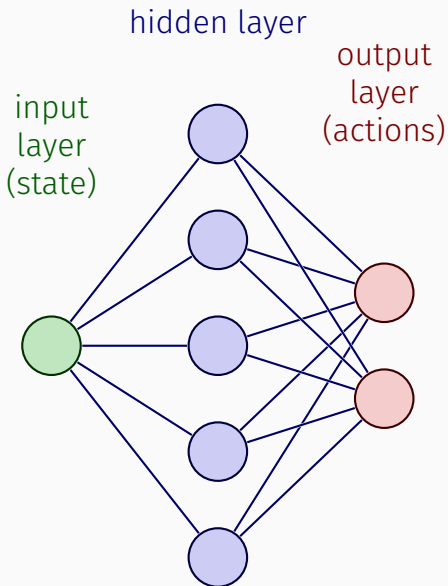
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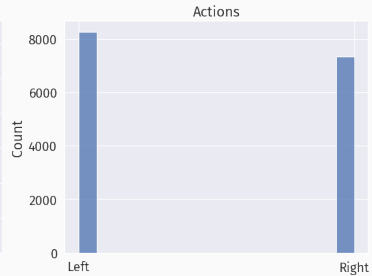
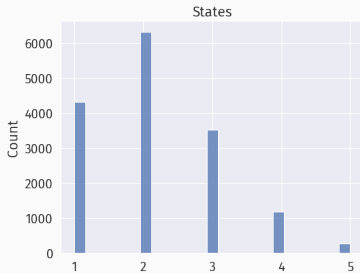
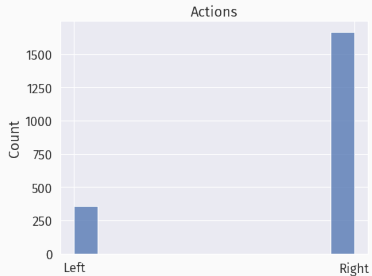
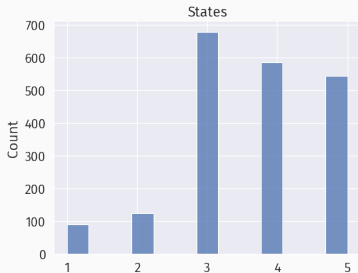
Toy task : Random Walk 1D



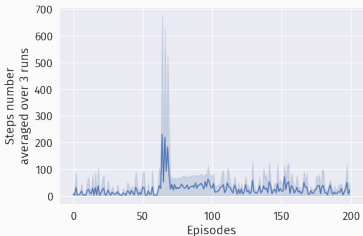
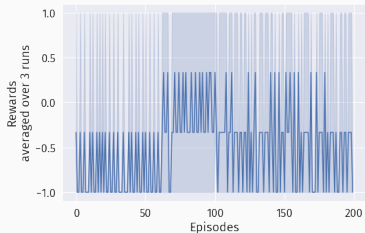
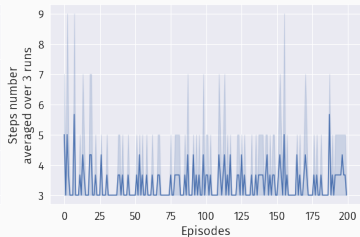
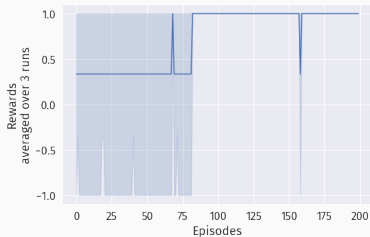
Network used



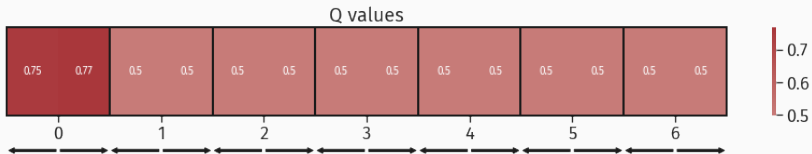
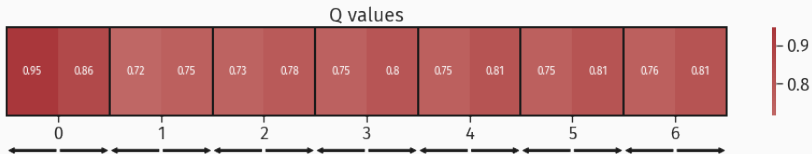
States and actions



Rewards and steps



Q-values learned



Questions ?