



Graded Assignment: Graded Assignment: Describe Three MDPs

You passed!

Congratulations! You earned 12 / 12 points. Review the feedback below and continue the course when you are ready.

AI Grading

Your assignment has been graded by AI. View your scores below.



Instructions

My submission

Discussions

My Submission

Submitted on May 27, 2025

PROMPT

Create an MDP. Remember to describe the states, actions and rewards. Make sure your three MDPs are different from each other.

Robot Vacuum Cleaner in a House

States:

- The robot's current location (e.g., kitchen, living room, bedroom, hallway)
- Whether each room is clean or dirty (e.g., a binary flag for each room)

Actions:

- Move to an adjacent room
- Clean the current room
- Stay idle

Rewards:

- +10 for cleaning a dirty room
- 1 for moving (energy cost)
- 0 for staying idle
- +50 bonus if all rooms are clean

RUBRIC

Did the learner describe an MDP, and is it different than their other submissions?

☐ 0 points
No

☒ 1 point
Yes

Are the **states** well-specified? Namely are they Markov and so can be used as MDP states.

☐ 0 points
No

☒ 1 point
Yes

Are the **actions** well-specified? Namely can they be used as actions in an MDP.

☐ 0 points
No

☒ 1 point
Yes

Are the **rewards** well-specified? Namely to satisfy the requirements in the definition of an MDP with the described state and action set.

☐ 0 points
No

☒ 1 point
Yes



<p>PROMPT</p> <p>Create an MDP. Remember to describe the states, actions and rewards. Make sure your three MDPs are different from each other.</p> <p>Personalized News Recommendation System</p> <p>States:</p> <ul style="list-style-type: none">• User’s recent reading history (e.g., last 5 articles read)• Time of day• User’s current mood (inferred from interactions: e.g., interested, bored, neutral) <p>Actions:</p> <ul style="list-style-type: none">• Recommend a specific news article from a pool• Recommend a video• Recommend a break (suggest user takes a rest) <p>Rewards:</p> <ul style="list-style-type: none">• +5 if the user clicks and reads the recommended article• +2 if the user watches a recommended video• -3 if the user ignores the recommendation• 0 if the user takes a break	<p>RUBRIC</p> <p>Did the learner describe an MDP, and is it different than their other submissions?</p> <p><input type="radio"/> 0 points No</p> <p><input checked="" type="radio"/> 1 point Yes</p> <p>Are the states well-specified? Namely are they Markov and so can be used as MDP states.</p> <p><input type="radio"/> 0 points No</p> <p><input checked="" type="radio"/> 1 point Yes</p> <p>Are the actions well-specified? Namely can they be used as actions in an MDP.</p> <p><input type="radio"/> 0 points No</p> <p><input checked="" type="radio"/> 1 point Yes</p> <p>Are the rewards well-specified? Namely to satisfy the requirements in the definition of an MDP with the described state and action set.</p> <p><input type="radio"/> 0 points No</p> <p><input checked="" type="radio"/> 1 point Yes</p>

<p>PROMPT</p> <p>Create an MDP. Remember to describe the states, actions and rewards. Make sure your three MDPs are different from each other.</p> <p>Autonomous Drone Delivery</p> <p>States:</p> <ul style="list-style-type: none">• Drone’s current location (coordinates or grid cell)• Battery level (e.g., high, medium, low)• Weather condition (e.g., clear, rainy, windy)• Package status (onboard, delivered) <p>Actions:</p> <ul style="list-style-type: none">• Move north, south, east, west• Ascend or descend• Deliver package• Return to base to recharge	<p>RUBRIC</p> <p>Did the learner describe an MDP, and is it different than their other submissions?</p> <p><input type="radio"/> 0 points No</p> <p><input checked="" type="radio"/> 1 point Yes</p> <p>Are the states well-specified? Namely are they Markov and so can be used as MDP states.</p> <p><input type="radio"/> 0 points No</p> <p><input checked="" type="radio"/> 1 point Yes</p> <p>Are the actions well-specified? Namely can they be used as actions in an MDP.</p> <p><input type="radio"/> 0 points No</p>
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<p>Rewards:</p> <ul style="list-style-type: none">• +100 for successful delivery• -10 for each movement (energy cost)• -50 if battery depletes before returning to base• -20 for attempting delivery in hazardous weather	<div><div><div></div><div>0 points</div><div>No</div></div><div><div></div><div>1 point</div><div>Yes</div></div></div> <p>Are the rewards well-specified? Namely to satisfy the requirements in the definition of an MDP with the described state and action set.</p> <div><div><div></div><div>0 points</div><div>No</div></div><div><div></div><div>1 point</div><div>Yes</div></div></div>
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If you're unsatisfied with your scores, you can start a new attempt for your assignment or switch to have your assignment graded by your peers.

Start new attempt

Switch to peer grading

Comments

Comments left for the learner are visible only to that learner and the person who left the comment.

NH

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