Configuration Space

4 questions

1 point

1.

Configuration Space obstacles allow us to model:

- Only the shape of the robot
- Only the shapes of the obstacles in the environment
- Both the geometry of the robot and the shapes of the obstacles in the environment

1 point

2.

The effective dimension of the configuration space of the robot is determined by:

- The dimensionality of the workspace, for example a robot restricted to the plane will have a 2 dimensional configuration space while a robot moving in 3 dimensions will have a 3 dimensional configuration space.
- The number of joints or degrees of freedom that the robot mechanism has. For example a robots that can translate and rotate in the plan will have a 3 dimensional configuration space reflecting 2 degrees of translational freedom and 1 rotational. A robot with 5 revolute joints will have a 5 dimensional configuration space.

1 point

3.

True or false: the Visibility graph method is complete because it will always find a path through space if one exists and report failure if there is no path.

- True
- False

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1 point

4.

True or false, the Trapezoidal Decomposition method is complete because it will always find a path through space if one exists and report failure if there is no path.

- True
- Fasle

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3 questions unanswered

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