Mapping of Unknown Environments Using Autonomous Robots

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Our goal is to create an algorithm that will allow an autonomous robot to navigate through an unknown environment and determine uniform coverage. While navigating, the robot shall create in memory a map of the observed area, as well as objects detected, in a series of memory models. The memory models are generated using the A\*(A-Star) algorithm. The robot shall utilize front-mounted and side-mounted ultra-sonic range sensors to scan the environment while using DC motors to power the wheels for navigation. We plan to track the robot’s progress by transferring the robot’s memory model to a computer to display the map onscreen.

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