

SoutheastCon 2012 Hardware Competition Entry

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Abstract: Robotics has become an increasingly important field in human society. An exciting avenue for robots is their ability to explore, take measurements and interpret information. Autonomous information gathering robots are needed for a number of tasks ranging from the exploring the far reaches of space to seeing just what's around the corner. However, such a robot should be adaptable so as to respond to different environmental settings and should be robust enough to compensate for dynamic or non-ideal settings. It should be able to tolerate and compensate for discrepancies in its environment such as a small bump or a minor difference in the width of a given hallway. Additionally, it should be able to understand the context of the given task at hand and perform the said task with accuracy and reliably. The objective of this competition is to build a robot that can successfully traverse a maze-like course analyzing electrical signals and other information along the way to point it in the right direction. Points are assessed for each correct reading and interpretation of data as the robot circulates around the track. The robot with the highest score is judged the winner. In case of a tie, the robot with the higher ratio of correct choices vs. total tasks is judged the winner. This paper will describe the steps used to build the robot and the programming concepts involved.

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