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+What is SLAM?

SLAM stands for Simultaneous Localization and Mapping. It is a problem in robotics and computer vision that deals with the simultaneous estimation of the robot's pose .

+Algorithms

Pose graph optimization is a technique for solving the SLAM problem. It works by constructing a graph of the robot's poses, and then optimizing the graph to find the most likely configuration of the poses given the available measurements.

+The hardware sensors you need.

Accelerometers: These sensors measure the acceleration of the robot. They can be used to estimate the robot's velocity and orientation.

Gyroscopes: These sensors measure the angular velocity of the robot. They can be used to estimate the robot's orientation.

Odometers: These sensors measure the distance traveled by the robot. They can be used to estimate the robot's position.

Lidar: This sensor emits a laser beam and measures the time it takes for the beam to return. It can be used to create a 3D map of the environment.