

Localization 3: Histogram filters and particle filters

Overview

Introduction

Localization is the problem of determining and tracking the robot's position, relative to a map of its environment.

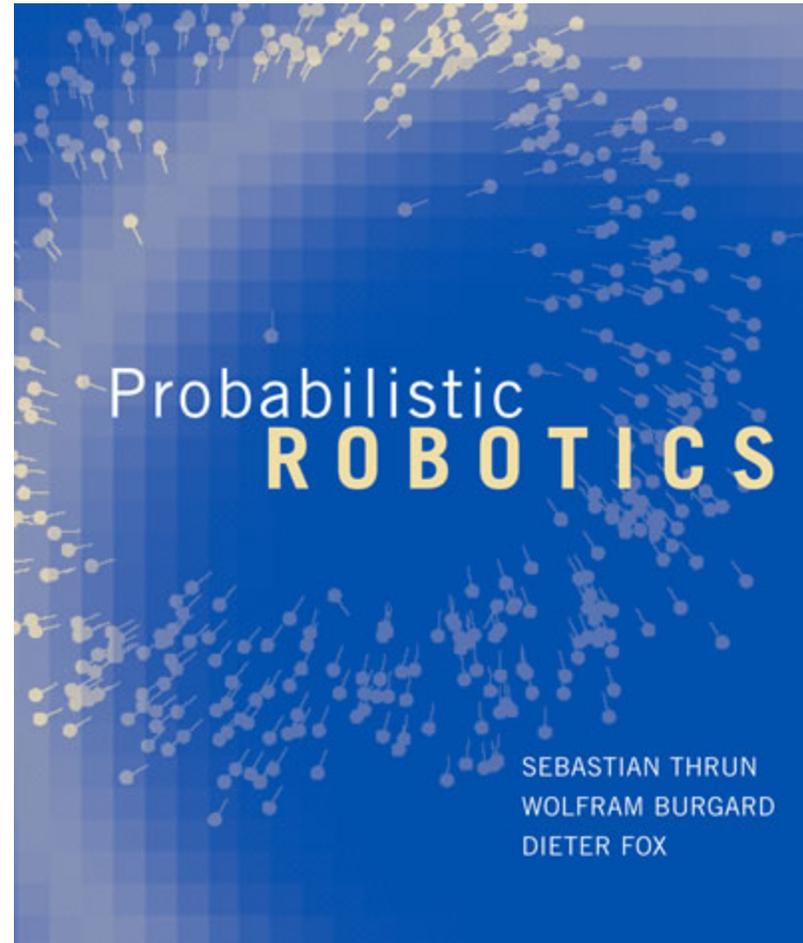
The **histogram filter** is a localization algorithm that maintains an estimate of the robot's state, expressed as collection of probabilities for individual cells.

The **particle filter** is a localization algorithm that maintains an estimate of the robot's state, expressed as collection of samples.

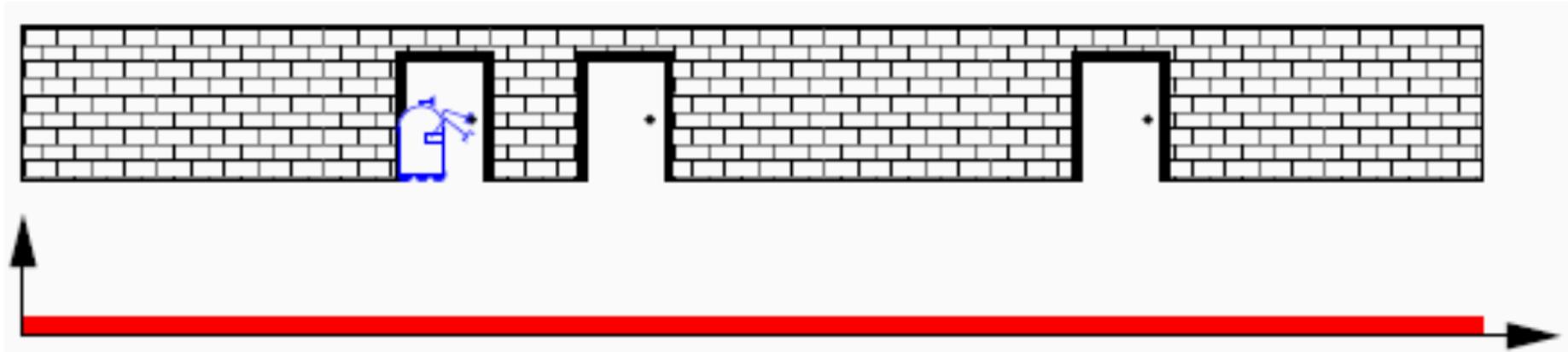
These filters are:

- passive
- local
- probabilistic

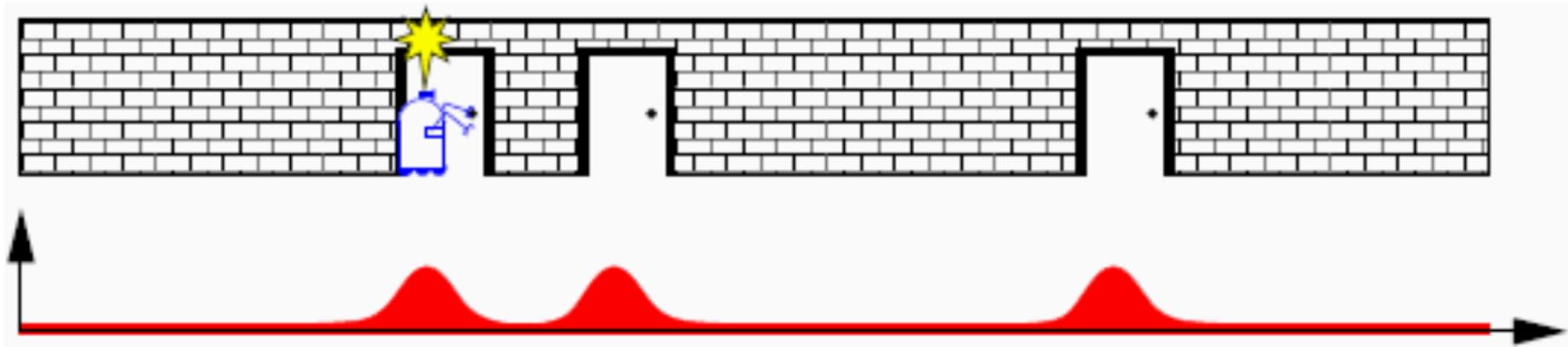
Introduction



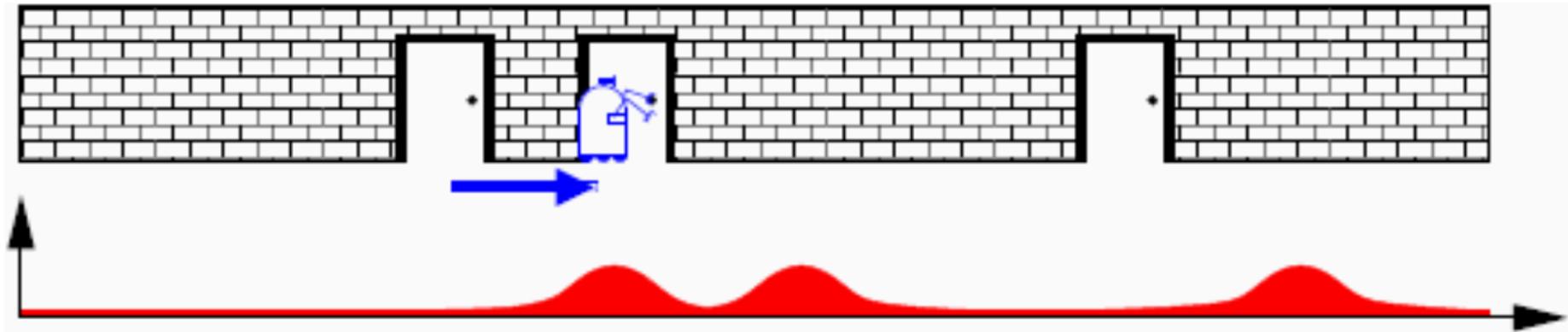
Basic idea of probabilistic localization



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