



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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Bayes Filter and Mobile Robot Localization

MONDAY, October 30, 2017, at 1:00 PM
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ABSTRACT

I introduce probabilistic robotics and discuss the Bayes filter which is an important algorithm in this field. Two important forms of Bayes filter are widely used to solve the problem of mobile robot localization, which are extended Kalman filter and particle filter. After talking about different kinds of models in the localization problem, I introduce how to use these models to implement Bayes Filter and estimate the pose of mobile robots. After that, I simulate a virtual robot and predict its pose during its motion process with Monte Carlo Localization method in MATLAB.

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