

Bachelor's / Master's Thesis

Online Parameter Learning for mobile robots with limited sensing

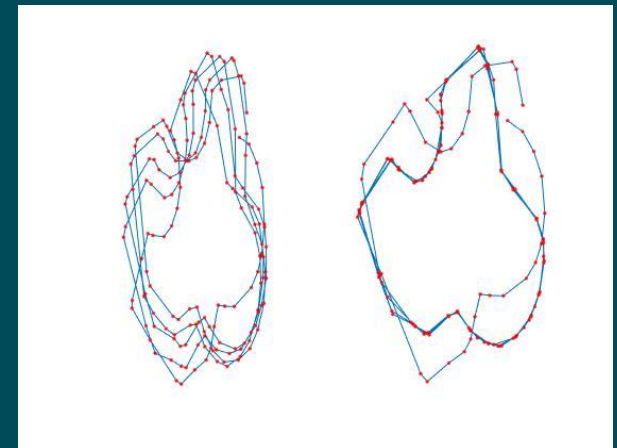
Low cost robots, such as vacuum cleaners or lawn mowers employ simplistic and often random navigation policies. Although a large number of sophisticated mapping and planning approaches exist, they require additional sensors like LIDARs, cameras or time of flight sensors. At the Institute for Robotics and Cognitive Systems we develop smart mapping algorithms for robots with only limited sensing abilities. Such mapping strategies mostly rely on odometry data, which are only as accurate as the odometry parameters. Therefore it is crucial for a successful mapping algorithm to either know the correct odometry data or learn them online during the mapping procedure.

Tasks

You will develop ideas for learning odometry parameters online during mapping procedure and evaluate them in simulations based on real data. The most promising solution should then be implemented prototypically and its functionality demonstrated.

Qualification

- Mathematical skills and the willingness to work in a team
- Interest in Optimization Techniques and Learning
- Programming skills (Matlab, basic C++)



Interested? Contact M. Sc. Nils Rottmann at rottmann@rob.uni-luebeck.de!