Robot Mapping

This Course

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Topics

- Simultaneous Localization and Mapping
- Kalman filter, EKF, UKF
- Information filter
- Particle filter
- Graph-based approaches
- Least squares error minimization
- Robust optimization approaches
- Hierarchical approaches
- Data association
- SLAM front-ends
- Appearance-based approaches
- Long term operation
- Semantic mapping

Sprit of the Course

Mixture of

- Introduction to robot mapping & SLAM
- Key milestones of the past 20 years
- Relevant state-of-the-art approaches for robot mapping
- Hands on the problems – practical work

Prerequisites

- Basic math skills (LA, probabilistic concepts)
- Basic programming skills
- Useful: having attended the Introduction to Mobile Robotics course

Exam

- Oral exam

Who Attended Introduction to Mobile Robotics?

Lecture and Exercise

- Lecture: Mondays 10-12
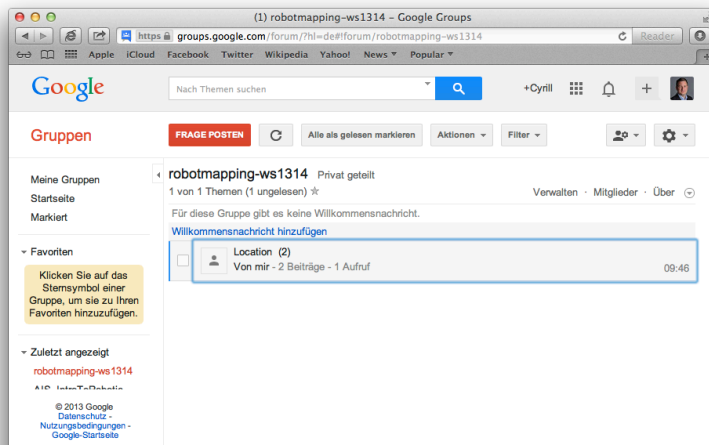- Exercise: Tuesdays 10-12
- 22.10.13: short lecture & octave exercise

To-do

- Install octave on your notebook
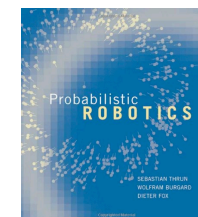- Bring your notebook to the exercises

Questions and Answers

https://groups.google.com/forum/#!forum/robotmapping-ws1314

Material

- Slides
- Lecture recordings
- Literature (papers) on the course website
- Thrun et al. "Probabilistic Robotics"

Feedback

Talk to me or send me email!

The earlier you provide feedback the faster and easier things will change…

Questions?