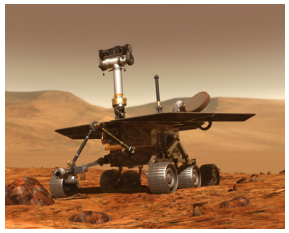
Photogrammetry & Robotics Lab

Course Introduction

Cyrill Stachniss

Autonomous Mobile Systems




Two Fundamental Questions in Mobile Robotics

What is the state of the world?

State Estimation

Which action to execute?

Action Selection

Focus of this Couse

What is the state of the world?

State Estimation

Focus on Geometric Estimation

What does the world look like
and where is the robot?

Topics & Planned Schedule

- 1st half of the term: Stachniss & Chebrolu
- 2nd half of the term: Klingbeil & Kuhlmann

Part 1 – Stachniss

- Least squares
- Graph-based SLAM
- Pose-graphs and landmarks
- Robust optimization for SLAM
- Camera models
- Relative orientation of the image pair
- Fundamental and essential matrix: F & E

People

Cyrill Stachniss

Nived Chebrolu

Lectures, Exercises, and Exam

- **Lectures** as **video** recording
- **Tutorials** & questions via **Zoom**
- **Homework** assignments
- Deadlines: see assignment sheet
- **Oral exam**

Homework Assignments

- Deadline given on the assignments
- **Exam admission: 50%** of the points of the homework assignments
- **Coding** is an essential part of the homework assignments
- Submission in groups of **2 students**
- Assignment/submission via eCampus
- Limit collaboration among groups **(zero tolerance on plagiarism)**

Problems?

- In case of problems, please contact me or Nived Chebrolu via Email:

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