

GMAR Robotics School 2020

Draft; do not publish

Organization

- Date: tentatively 2020-11-16 - 2020-11-20 (Monday-Friday)
- Location: [Villa Blanka](#); Innsbruck
- Topic: Mobile Manipulation

Audience:

- advanced Master and young doctoral students in subject areas related to robotics (engineering, computer science, etc.)
- 15-25? participants, depending on the location
- prerequisite: familiarity with ROS, to be specified; recommend tutorials

Concept:

- hands-on, making things work on real robots
- technical lectures concentrated near the beginning of the week
- hacking starting day one, growing in importance as the course advances
- hacking in small teams dedicated to specific functionalities
- some application talks towards the end, not relevant to the hacking

Implementation Goal:

- SLAM, autonomous navigation
- vision-based grasping of (known and/or unknown?) objects from known locations
- placing objects in designated locations
- execution of high-level plans involving the above capabilities

Robots:

- 2 UIBK mobile manipulators (homebrew base with Franka Emika Panda)
- TUW Honda mobile manipulator

Schedule

Each session lasts 90 minutes; blank = hacking.

Sessions	Monday	Tuesday	Wednesday	Thursday	Friday
Morning I	Mechatronics of mobile manipulators (Johannes Gerstmayr*)	Robot Vision (Markus Vincze*)	SLAM/Navigation (Incubed IT*)	Applications (Taurob, ...)	

Sessions	Monday	Tuesday	Wednesday	Thursday	Friday
Morning II	Kinematics (Andreas Müller*)	Picking and Placing (Justus Piater*)	Task Planning (Gerald Steinbauer*)		
Afternoon I	Dynamics, Control (Matteo Saveriano or Wolfgang Werth)	Human-Robot Interaction and Safety Aspects (Mathias Brandstötter*)			
Afternoon II	Path/Motion Planning (? or Matteo Saveriano)	<i>Excursion* to a company</i>			
Dinner	in town	Buffet?	on site	on site	-

* confirmed

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<https://iis.uibk.ac.at/events/2020-gmar-robotics-school?rev=1593587691>

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