

Übungen zur Vorlesung Sensor-enabled Intelligent Environments

Robot Operating System (ROS)

1. Install Ubuntu (9.10) and ROS.
2. Work through the following tutorials:
 - (a) <http://www.ros.org/wiki/ROS/Tutorials/UnderstandingNodes>
 - (b) <http://www.ros.org/wiki/ROS/Tutorials/UnderstandingServicesParams>
 - (c) <http://www.ros.org/wiki/ROS/Tutorials/UnderstandingTopics>
 - (d) <http://www.ros.org/wiki/ROS/Tutorials/WritingPublisherSubscriber%28c%2B%2B%29>
 - (e) <http://www.ros.org/wiki/ROS/Tutorials/ExaminingPublisherSubscriber>
 - (f) <http://www.ros.org/wiki/ROS/Tutorials/WritingServiceClient%28c%2B%2B%29>
 - (g) <http://www.ros.org/wiki/ROS/Tutorials/ExaminingServiceClient>.
3. Create your own package named **sei_one** and copy files `talker.cpp` and `listener.cpp` from [http://www.ros.org/wiki/ROS/Tutorials/WritingPublisherSubscriber\(c%2B%2B\)](http://www.ros.org/wiki/ROS/Tutorials/WritingPublisherSubscriber(c%2B%2B))
4. Change the `talker.cpp` such that it will:
 - (a) accept any arbitrary natural number on the command line (e.g. `./talker 5`),
 - (b) compute factorial of that number and,
 - (c) publish the result on the topic “factorial”.
5. Change the `listener.cpp` such that it will connect to the topic “factorial” and print out the result published by the talker.
6. Display computational graph of your nodes using `rxgraph` tool.
7. Submit the package **sei_one** and a computational graph to `blodow@cs.tum.edu` by 5.5.2010.