# Robot Operating System – modelowanie robotów (URDF)

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#### Uruchomienie ROSa



ROS Master:

\$ roscore



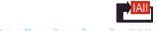


# Wymagane oprogramowanie



\$ sudo apt-get install ros-kinetic-urdf-tutorial ros-kinetic-urdf-sim-tutorial





## Przykłady



- \$ cd ~/catkin ws/src
- $\$ \ git \ clone \ https://github.com/ros/urdf\_tutorial$
- \$ cd urdf\_tutorial/urdf\_tutorial
- \$ roslaunch urdf\_tutorial display.launch model:=urdf/05-visual.urdf





## Złącza



\$ roslaunch urdf\_tutorial display.launch model:=urdf/06-flexible.urdf





#### Robot w Gazebo



\$ cd ../../urdf\_tutorial/urdf\_sim\_tutorial/

\$ roslaunch urdf\_sim\_tutorial gazebo.launch





## Złącza



\$ roslaunch urdf\_sim\_tutorial 09-joints.launch

zobacz: joints.yaml





## Złącza - napęd



\$ roslaunch urdf\_sim\_tutorial 09-joints.launch model:=urdf/10-firsttransmission.urdf.xacro

zobacz: urdf/10-firsttransmission.urdf.xacro i "rostopic echo /joint states"





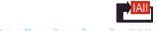
## Złącza - napęd



\$ roslaunch urdf sim tutorial 10-head.launch

\$ rostopic pub /r2d2\_head\_controller/command std\_msgs/Float64 "data: -0.707"





## Złącza - napęd



\$ roslaunch urdf\_sim\_tutorial 12-gripper.launch

\$ rostopic pub /r2d2\_head\_controller/command std\_msgs/Float64 "data: -0.707"





#### Złącza - otwieranie chwytaka



http://wiki.ros.org/urdf/Tutorials/Using%20a%20URDF%20in%20Gazebo

rostopic pub /r2d2 gripper controller/command std msgs/Float64MultiArray "layout: dim: - label: " size: 3 stride: 1 data offset: 0 data: [0, 0.5, 0.5]"





# Złącza - zamykanie chwytaka



http://wiki.ros.org/urdf/Tutorials/Using%20a%20URDF%20in%20Gazebo

rostopic pub /r2d2 gripper controller/command std msgs/Float64MultiArray "layout: dim: - label: " size: 3 stride: 1 data offset: 0 data: [-0.4, 0, 0]"



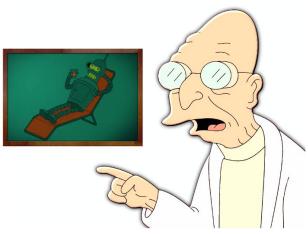
## Sterowanie kołami







# Dziękuję za uwagę



lrm.put.poznan.pl www.monoscience.com

