



ČESKÝ INSTITUT
INFORMATIKY
ROBOTIKY
A KYBERNETIKY
ČVUT V PRAZE

b3M33MKR: Introduction to Robots

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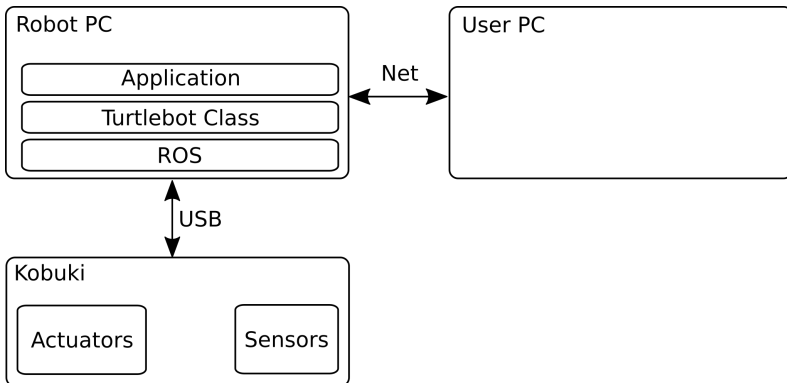
2018





- ▶ **Kobuky base**
 - ▶ Control
 - ▶ Odometry
 - ▶ Bumper
 - ▶ ...
- ▶ **NUC PC**
 - ▶ SSH
 - ▶ Wifi
 - ▶ ROS
- ▶ **RGBD Sensor**
 - ▶ Intel RealSense
 - ▶ Orbex Astra







- ▶ **Middleware that integrates, sensors, robots and logic into modular system.**
- ▶ **In barebones it provides communication layer between processing units.**
- ▶ **Supports multiple language and multiple machines.**
- ▶ **The main building blocks are Nodes, Topics and Services.**
- ▶ **Node - building block of robotic system (camera driver, robot controller, image filter ...)**
- ▶ **Topic - named stream of data with same type (rgb camera image, odometry, robot commands ...)**
- ▶ **Service - named function, with specific request and response (reset odometry, open gripper, compute ik ...)**



- ▶ **Network in the KN:E130 essid: e210bot, key: j6UsAC8a**
- ▶ **Using ssh: ssh ros@turtle01 pass: r0sr0s**
- ▶ **Using ssh with ip address: ssh ros@192.168.210.21 pass: r0sr0s**
- ▶ **Start robot driver: turtle_start**



▶ **Turtlebot**

- ▶ <https://gitlab.fel.cvut.cz/wagnelib/turtlebot>
- ▶ <http://www.turtlebot.com/turtlebot2/>
- ▶ <http://wiki.ros.org/Robots/TurtleBot>
- ▶ <http://wiki.ros.org/kobuki>

▶ **ROS**

- ▶ <http://www.ros.org>
- ▶ <http://wiki.ros.org>
- ▶ <https://answers.ros.org>