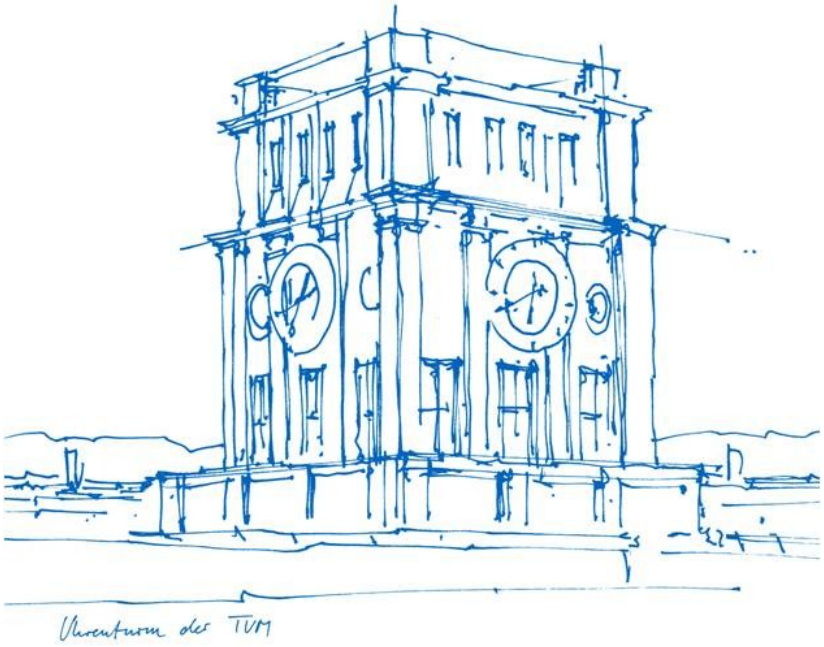
# Biologically-Inspired Learning for Humanoid Robots
SS 2025

## T2: AiNex Humanoid Robot Hands-on

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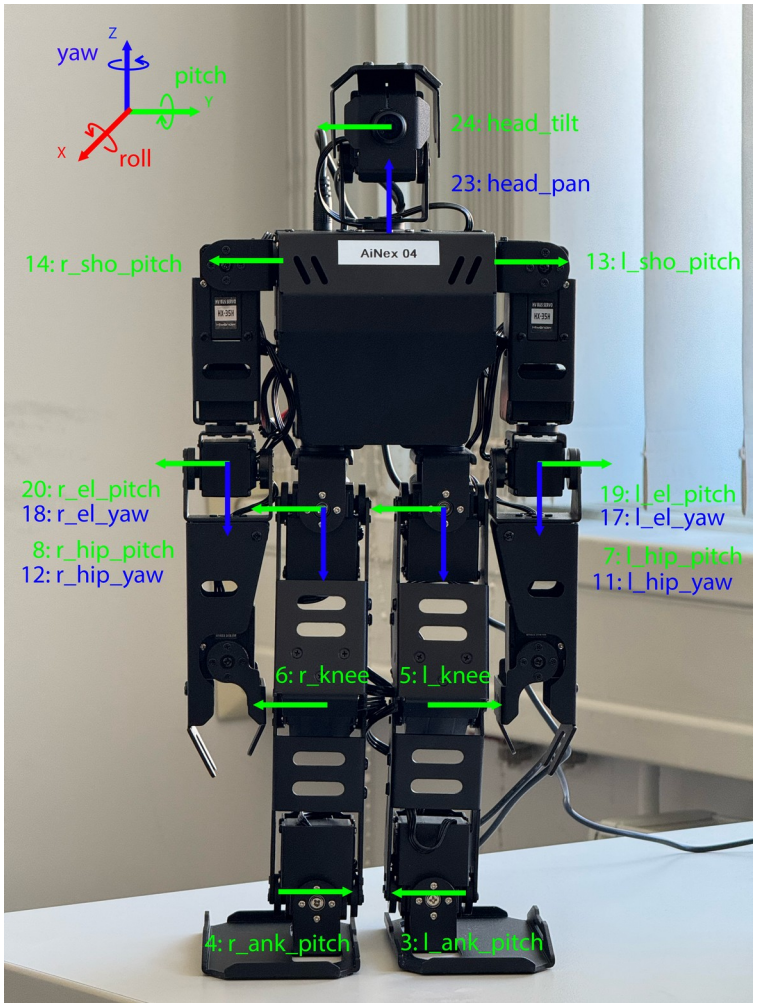
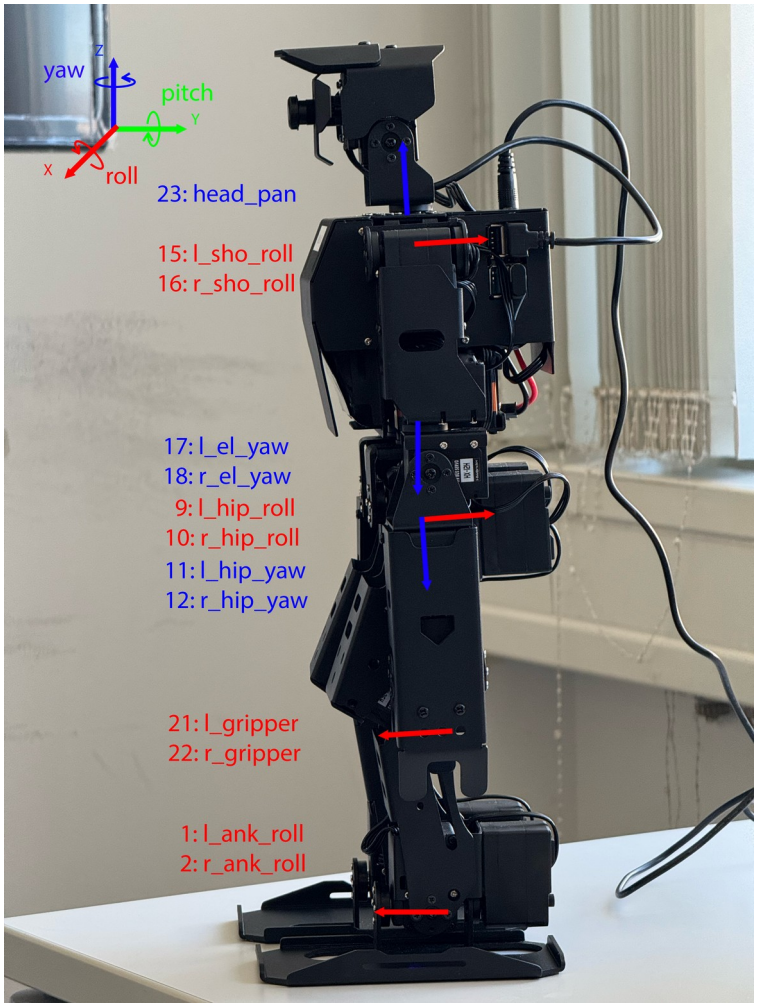
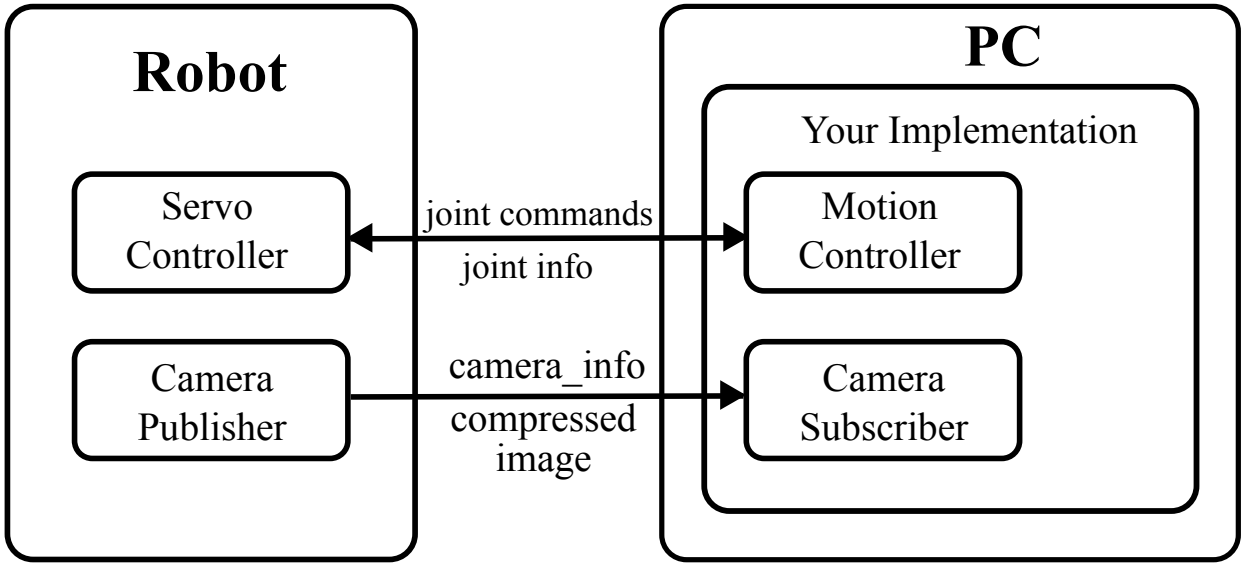
# AiNex: Zero positions, joint names, ids and motion axes



# System Overview




More details are documented in the tutorial sheet and the comments of the example code

Joint Commands (topics):

- Set joint positions (absolute)
- Change joint positions (relative)
- Lock/unlock joints

Joint Info (services):

- Positions
- IDs
- Range
- Temperature
- ...

# Important Notes !!!

- Don’t discharge your robot for too long. It is recommended to keep charging while using the robot, unless the cable is in the way when you execute certain motion.
  Voltage below 10V → battery level too low.

- Don’t lock the joints for too long. When you are not testing, make sure all the joints are unlock to prevent the motors overheat.
  Service call to unlock all joints:
  ```
  $ ros2 service call /Unock_All_Joints std_srvs/Empty {}
  ```

- Be conservative with your motion command. Always check the joint range (function call / service call) before sending commands. You can also use the joint_visualization_node with plotjuggler to check the motion range while manually move around the joints.

- Each PC is paired with a robot with a specific ROS_DOMAIN_ID. Don’t just swap your robot. If there is some problem with your robot, always ask the tutors for help.