

# SO-101 Building Session

CS 6341 Robotics

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# LeRobot SO-101 Robot



# Step 0

- One member of each group come get your SO101 robot.
- Check that everything is included in the bags.
- Fill up and the Sign one copy of the Material List and give it to the TA.
- Organize your working space.



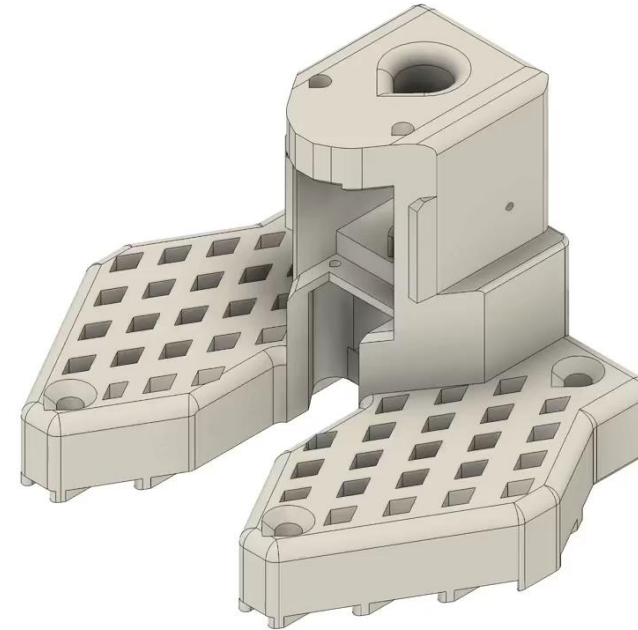
# Tips & Tricks

- Brains Over Brawn – If a part is stuck or a step is hard don't try to force it. Let someone else try or ask questions.
- Patience – No need to rush, yet let's try to have every robot correctly built by the end of the class. We will do it together step by step.
- Follow instructions



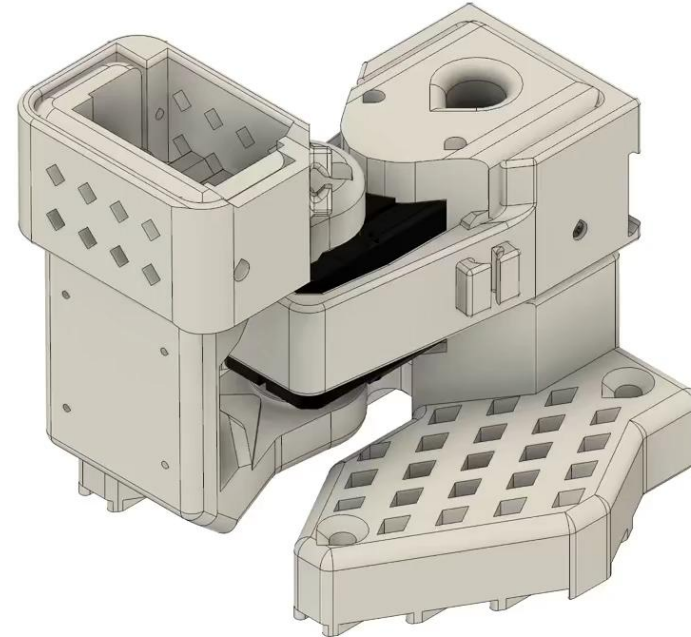
# Step 1

- Place the first motor into the base.
- Fasten the motor with 4 M2x6mm screws (smallest screws). Two from the top and two from the bottom.
- Slide over the first motor holder and fasten it using two M2x6mm screws (one on each side).
- Install both motor horns, securing the top horn with a M3x6mm screw.
- Attach the shoulder part.
- Tighten the shoulder part with 4 M3x6mm screws on top and 4 M3x6mm screws on the bottom
- Add the shoulder motor holder.



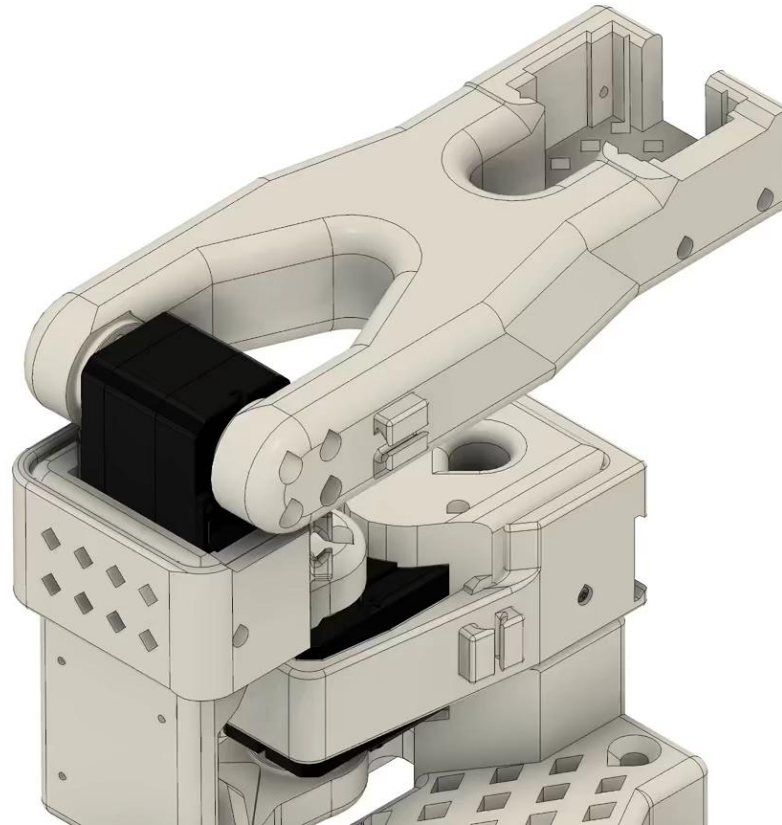
# Step 2

- Slide the second motor in from the top.
- Fasten the second motor with 4 M2x6mm screws.
- Attach both motor horns to motor 2, again use the M3x6mm horn screw.
- Attach the upper arm with 4 M3x6mm screws on each side.



# Step 3

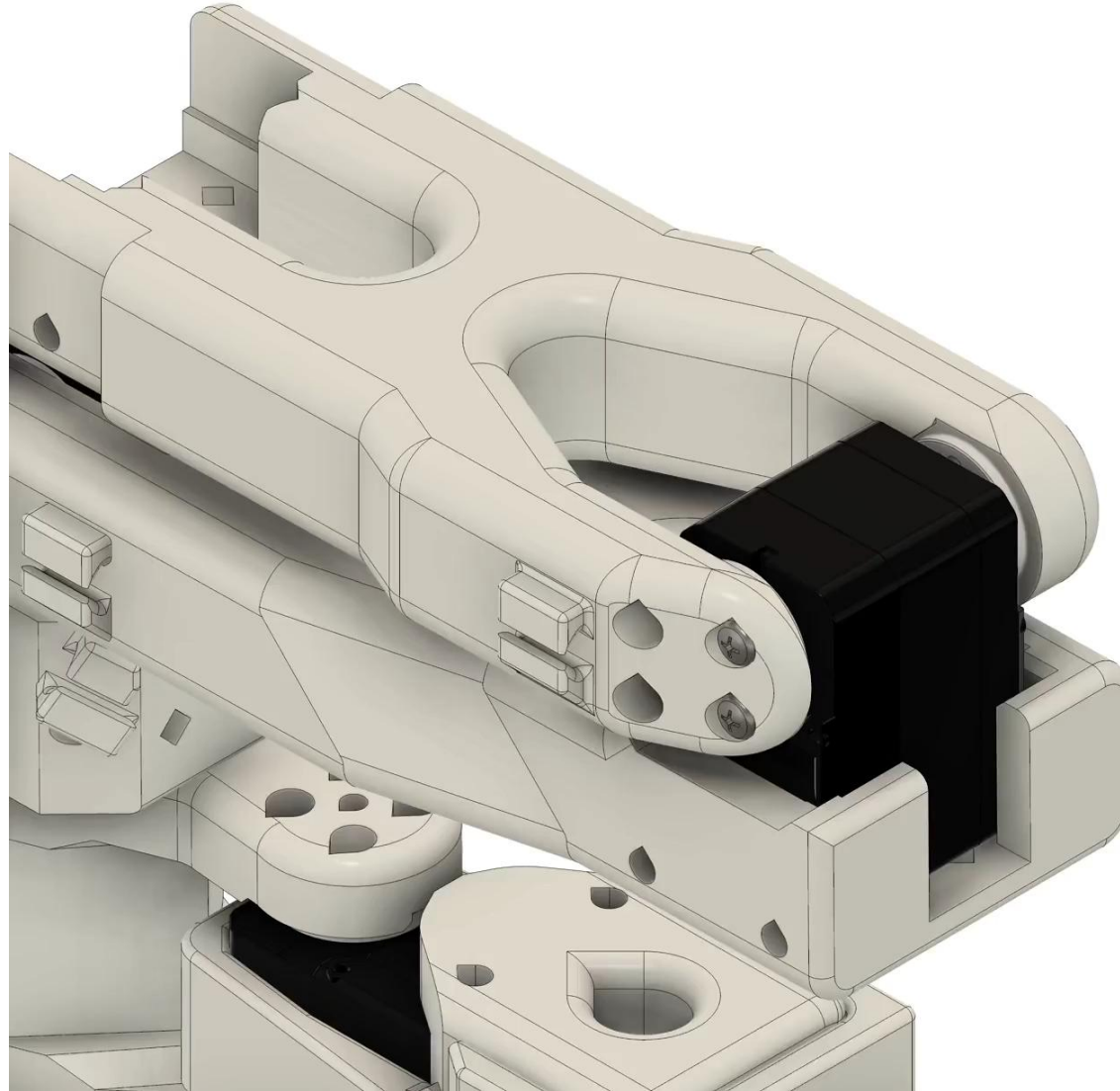
- Insert motor 3 and fasten using 4 M2x6mm screws
- Attach both motor horns to motor 3 and secure one again with a M3x6mm horn screw.
- Connect the forearm to motor 3 using 4 M3x6mm screws on each side.





# Step 4

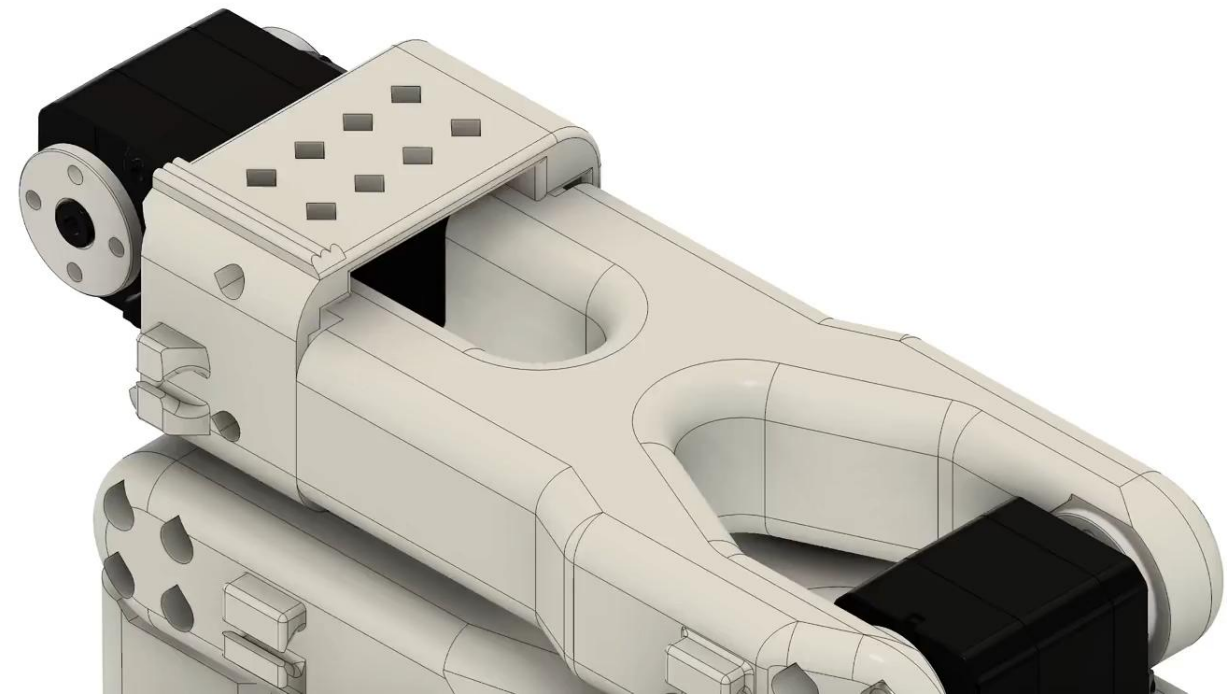
- Slide over motor holder 4.
- Slide in motor 4.
- Fasten motor 4 with 4 M2x6mm screws and attach its motor horns, use a M3x6mm horn screw.





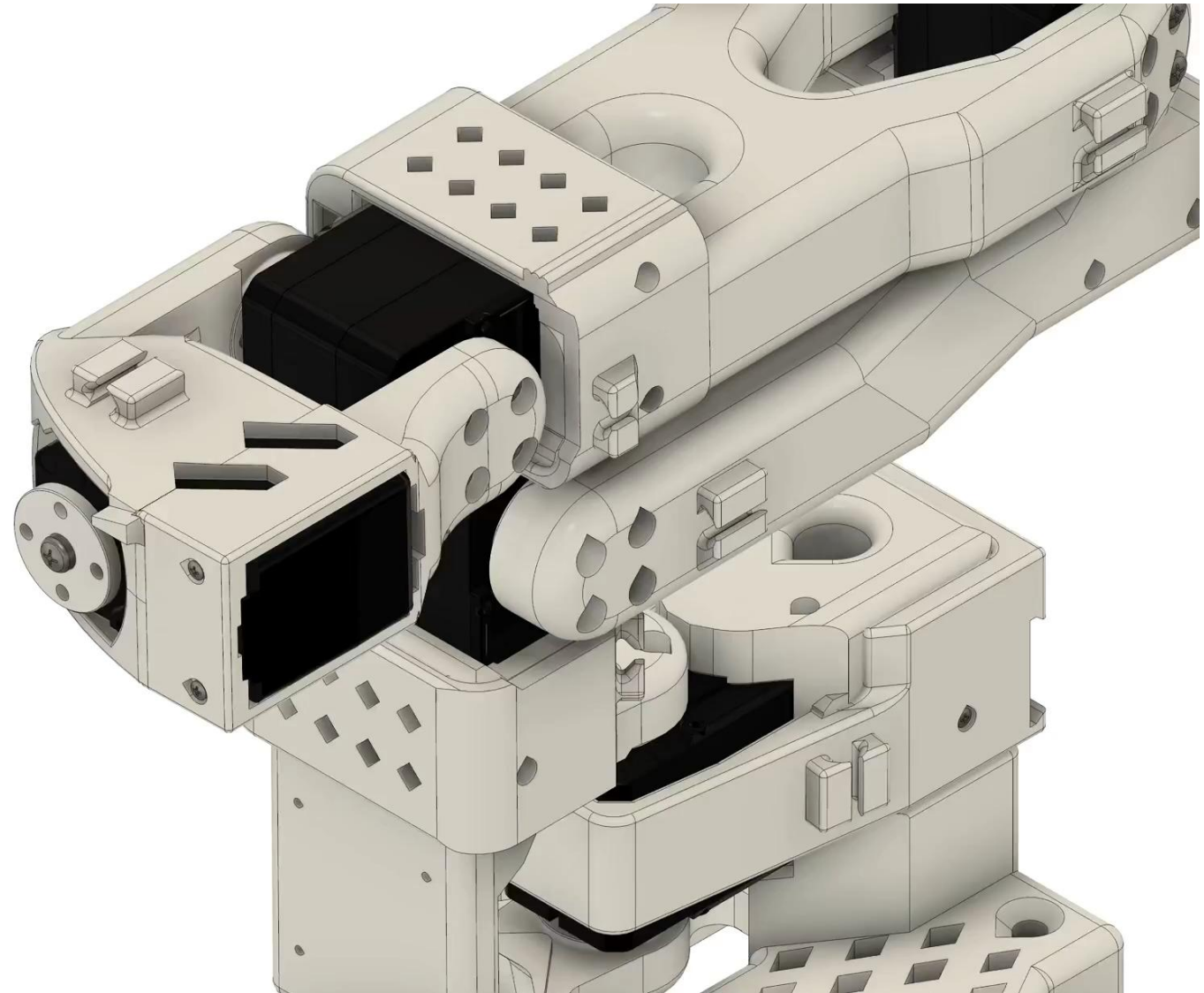
# Step 5

- Insert motor 5 into the wrist holder and secure it with 2 M2x6mm front screws.
- Install only one motor horn on the wrist motor and secure it with a M3x6mm horn screw.
- Secure the wrist to motor 4 using 4 M3x6mm screws on both sides.



# Step 6

- Attach the gripper to motor 5, attach it to the motor horn on the wrist using 4 M3x6mm screws.
- Insert the gripper motor and secure it with 2 M2x6mm screws on each side.
- Attach the motor horns and again use a M3x6mm horn screw.
- Install the gripper claw and secure it with 4 M3x6mm screws on both sides



# Robot Assembly Complete!

- Attach the SKU Bus Servo Adapter to it's 3D printed Holster.
- Attach one cable to each motor if you haven't done before.



# Robot Configuration

- Follow the instructions to setup an Anaconda environment for the LeRobot libraries.

Link: <https://huggingface.co/docs/lerobot/installation>

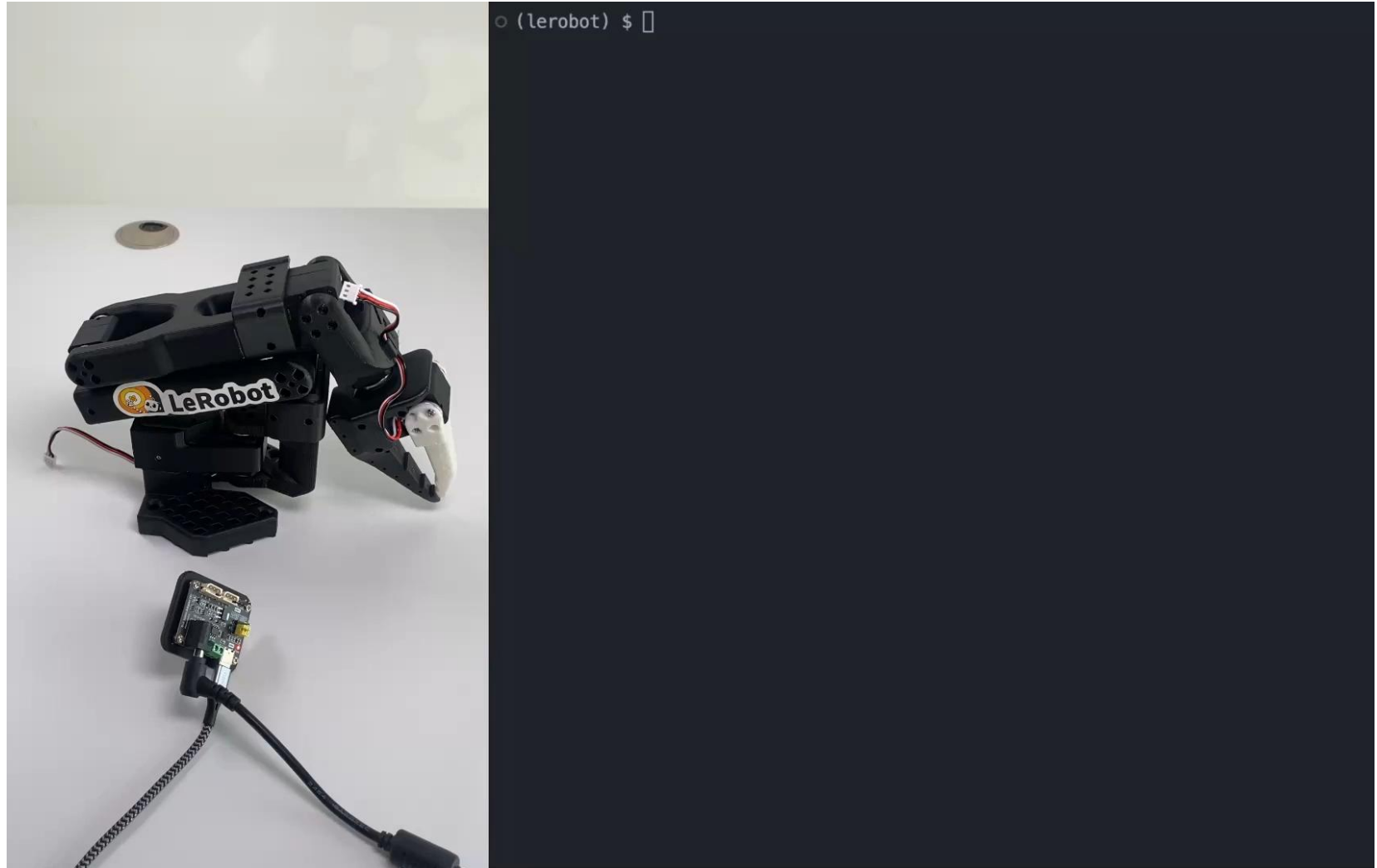
- Follow the instructions to setup to configure and calibrate robots.

Link: <https://huggingface.co/docs/lerobot/so101>



# Motor Setup

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# Robot Calibration

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