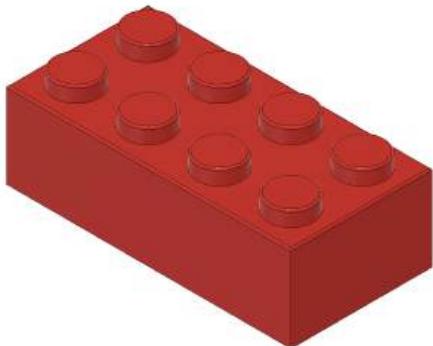
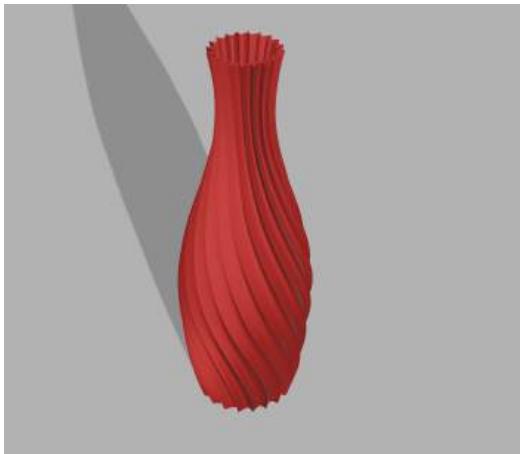


Photos of the Humanoid Project (and the process behind it)

Chapter 1: Learning CAD

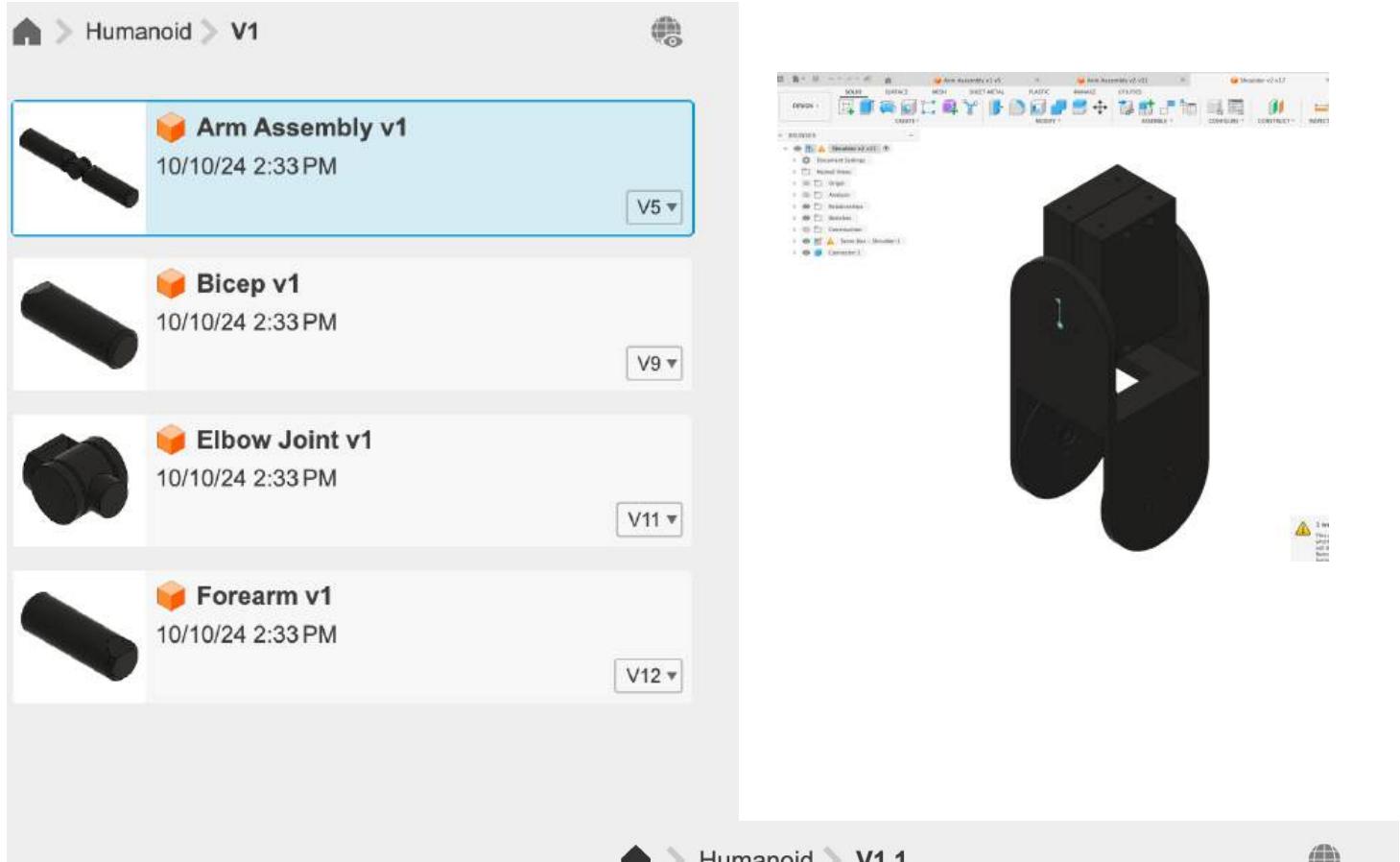
(September 2024)

	15. Painter's Tripod 18/09/24 2:06 PM	V2 ▾
	16. Design Intent (theory) 18/09/24 2:26 PM	V3 ▾
	17. Sketch Constraints (theory) 18/09/24 2:27 PM	V1 ▾
	18. STL to Solid 18/09/24 5:53 PM	V3 ▾
	19. Box 18/09/24 5:52 PM	V2 ▾
	20. Hinge Box 18/09/24 8:56 PM	V4 ▾
	21. Keychain Mold 18/09/24 8:30 PM	V3 ▾
	22. Chess Mold 18/09/24 8:55 PM	V2 ▾
	23. Tripod 21/09/24 12:47 PM	V4 ▾
	24. Napkin Holder 20/09/24 9:44 PM	V2 ▾
	25. Propellor 20/09/24 10:14 PM	V2 ▾
	26. Raspberry Pi Case 20/09/24 10:51 PM	



Chapter 2: Early Designs

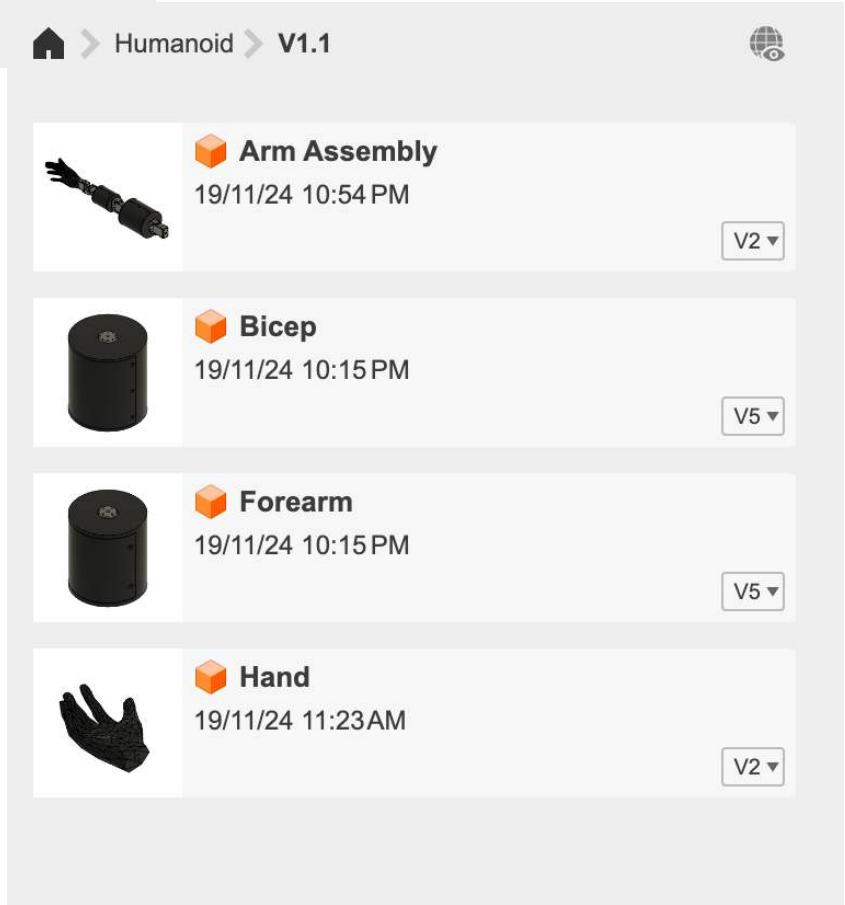
(October 2024)



The screenshot shows a CAD software interface with a toolbar at the top and a tree view of the document structure on the left. The main area displays four components of a humanoid arm:

- Arm Assembly v1** (V5) - A long cylindrical component.
- Bicep v1** (V9) - A black cylindrical component.
- Elbow Joint v1** (V11) - A black cylindrical component.
- Forearm v1** (V12) - A black cylindrical component.

A large 3D model of the humanoid arm is visible on the right side of the screen.



The screenshot shows a CAD software interface with a toolbar at the top and a tree view of the document structure on the left. The main area displays four components of a humanoid arm:

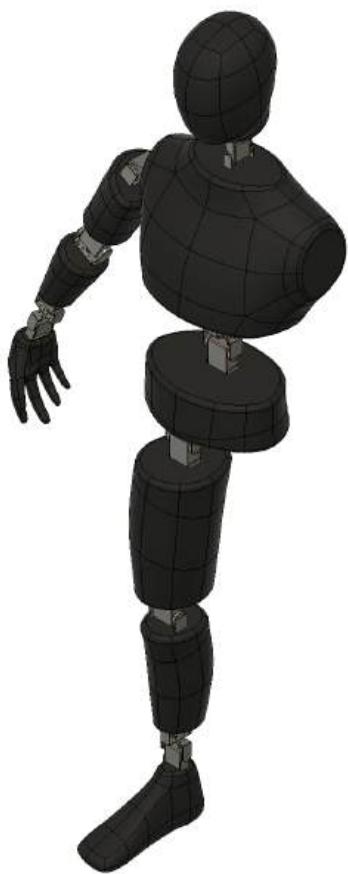
- Arm Assembly** (V2) - A detailed 3D model of the arm assembly.
- Bicep** (V5) - A black cylindrical component.
- Forearm** (V5) - A black cylindrical component.
- Hand** (V2) - A detailed 3D model of the hand.

A large 3D model of the humanoid arm is visible on the left side of the screen.



Humanoid > V2.3

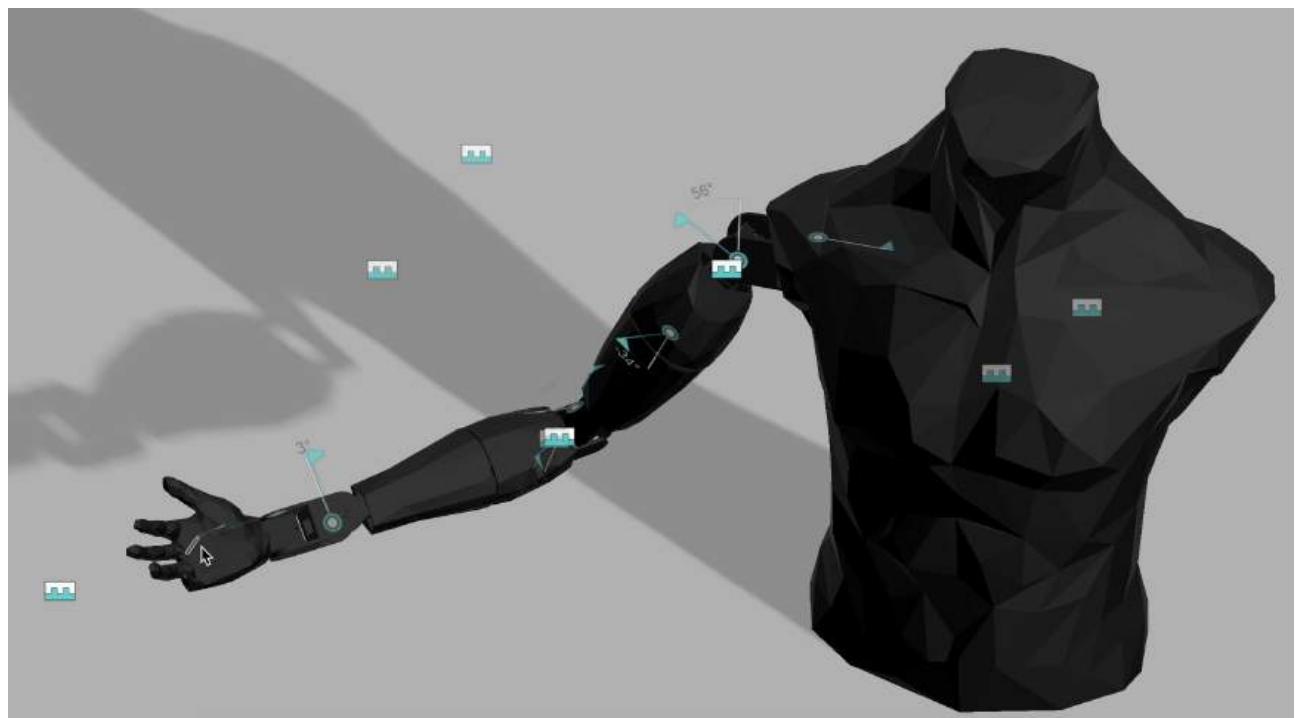
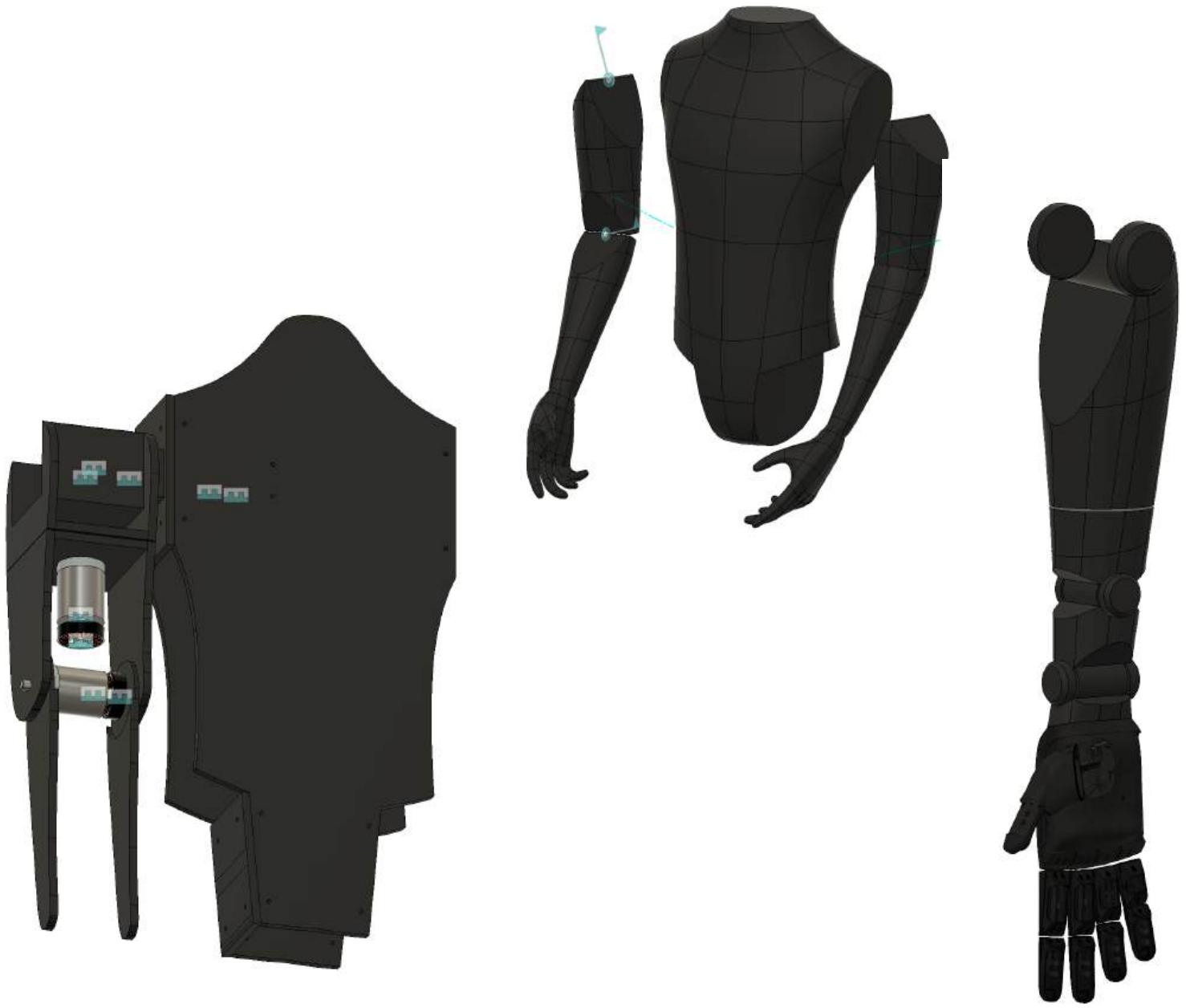
Component	Version
Bicep	V8
Face	V10
Forearm	V7
Full Bot Assembly	V7
Hand	V4
Head	V3
Torso	V5



Humanoid

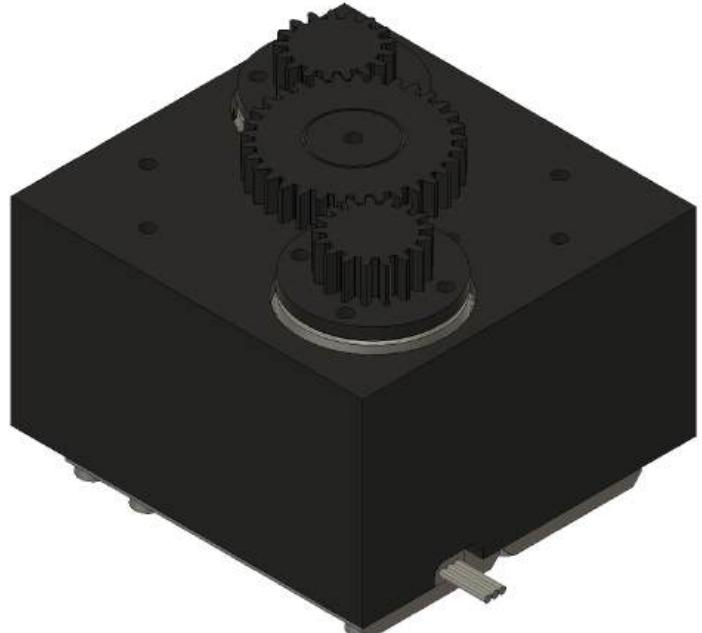
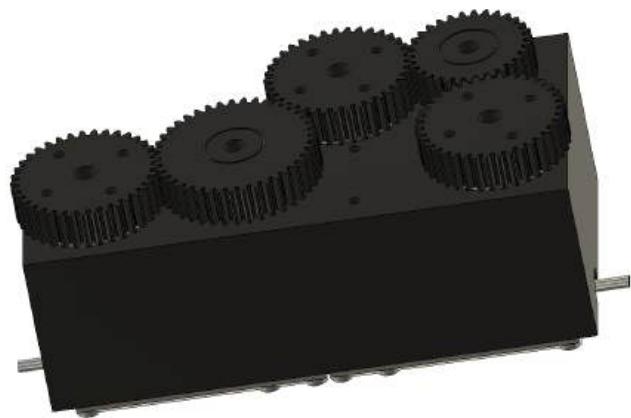
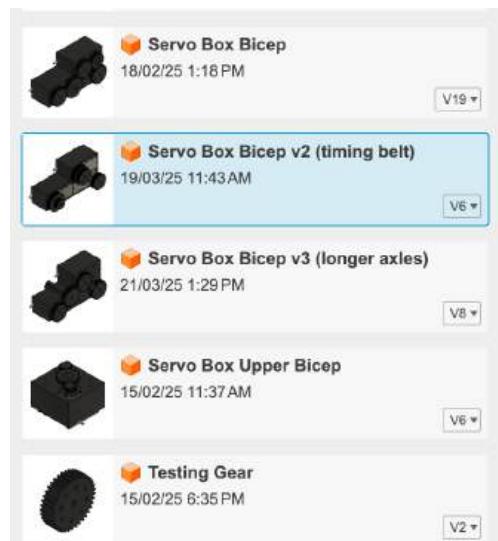
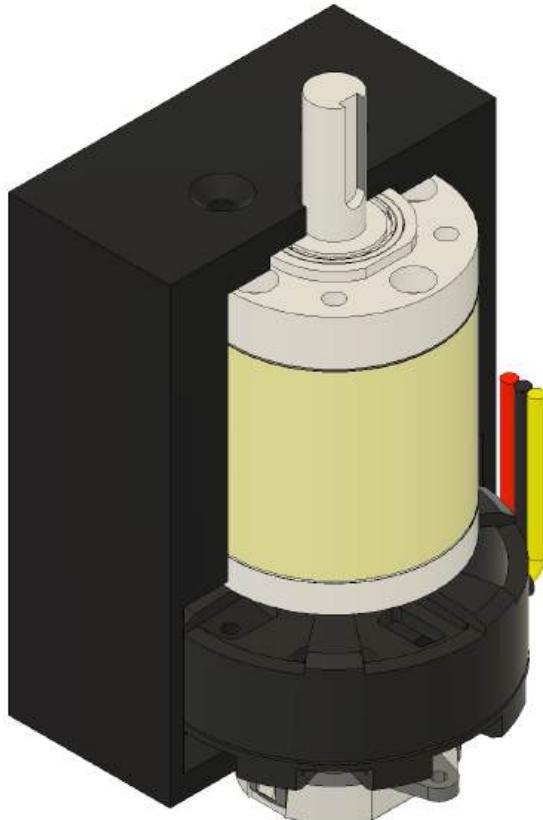
V1
V1.1
V2
V2.1
V2.2
V2.3
V3
V3.1
V4
V4.1
V5
V7





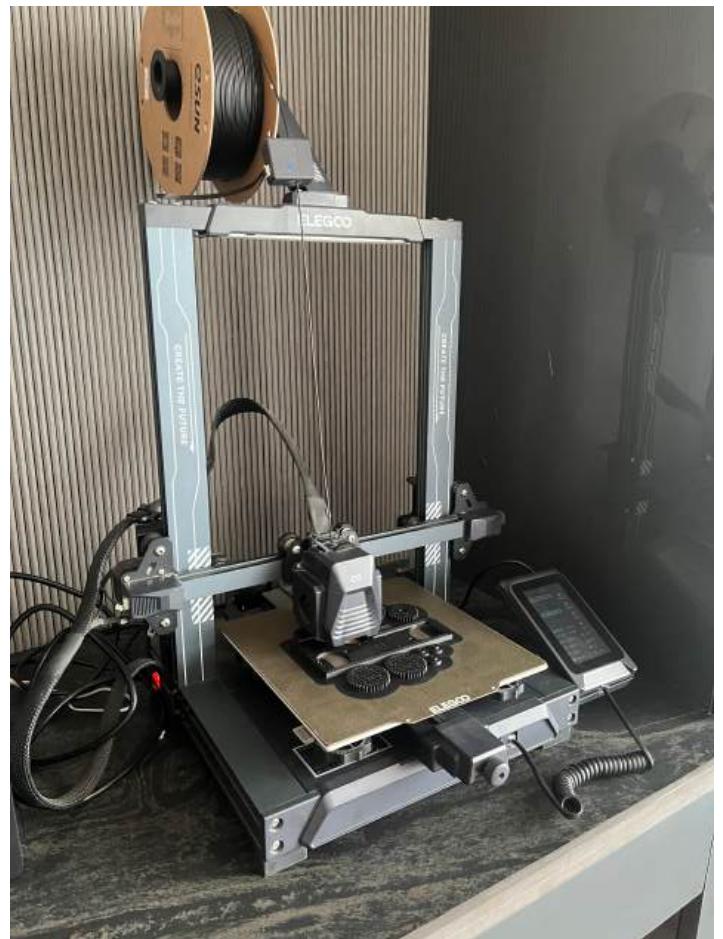
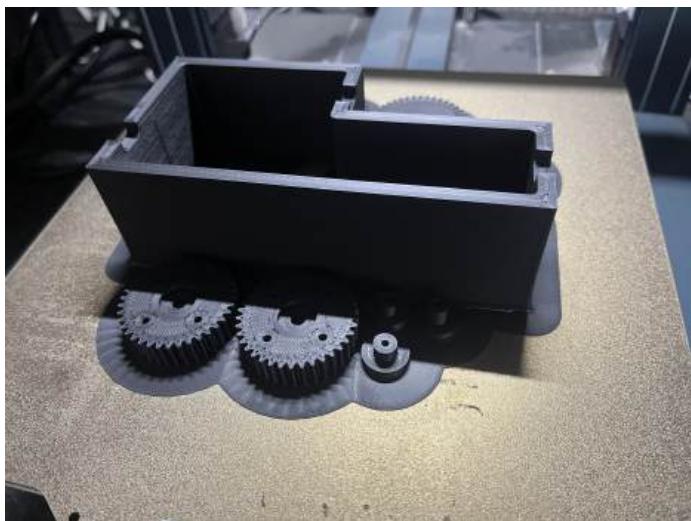
Chapter 3: Actuator Designs

(February 2025)



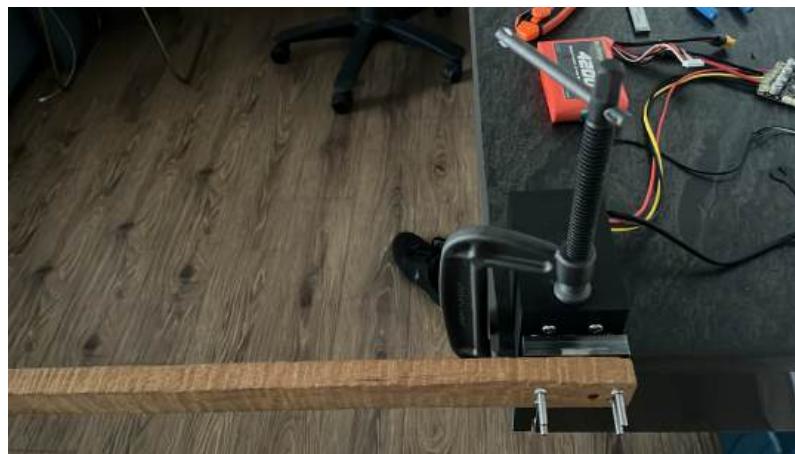
Chapter 4: First Prints

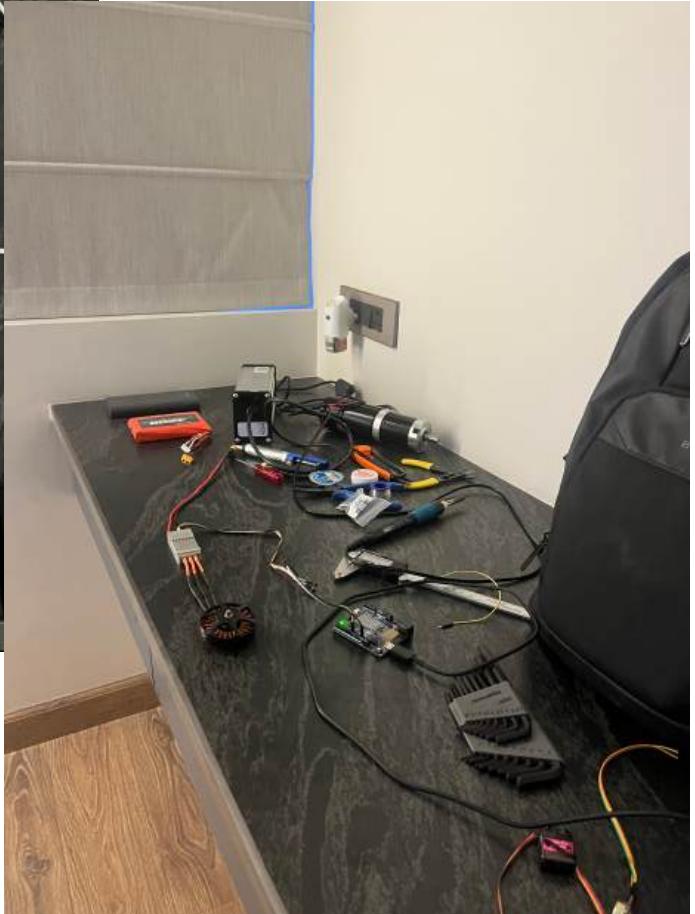
(March 2025)

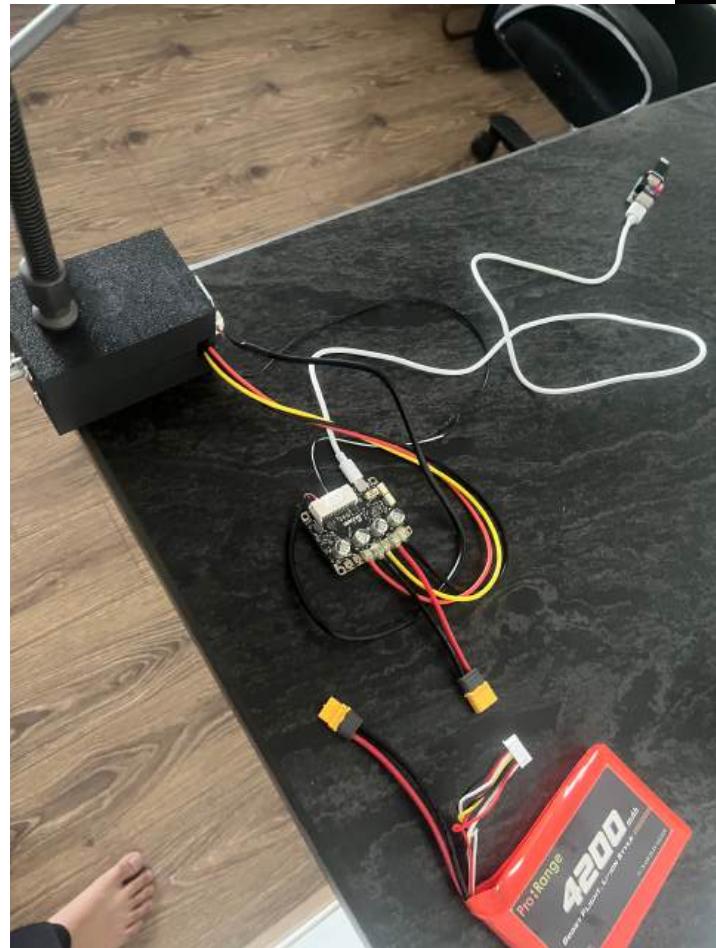


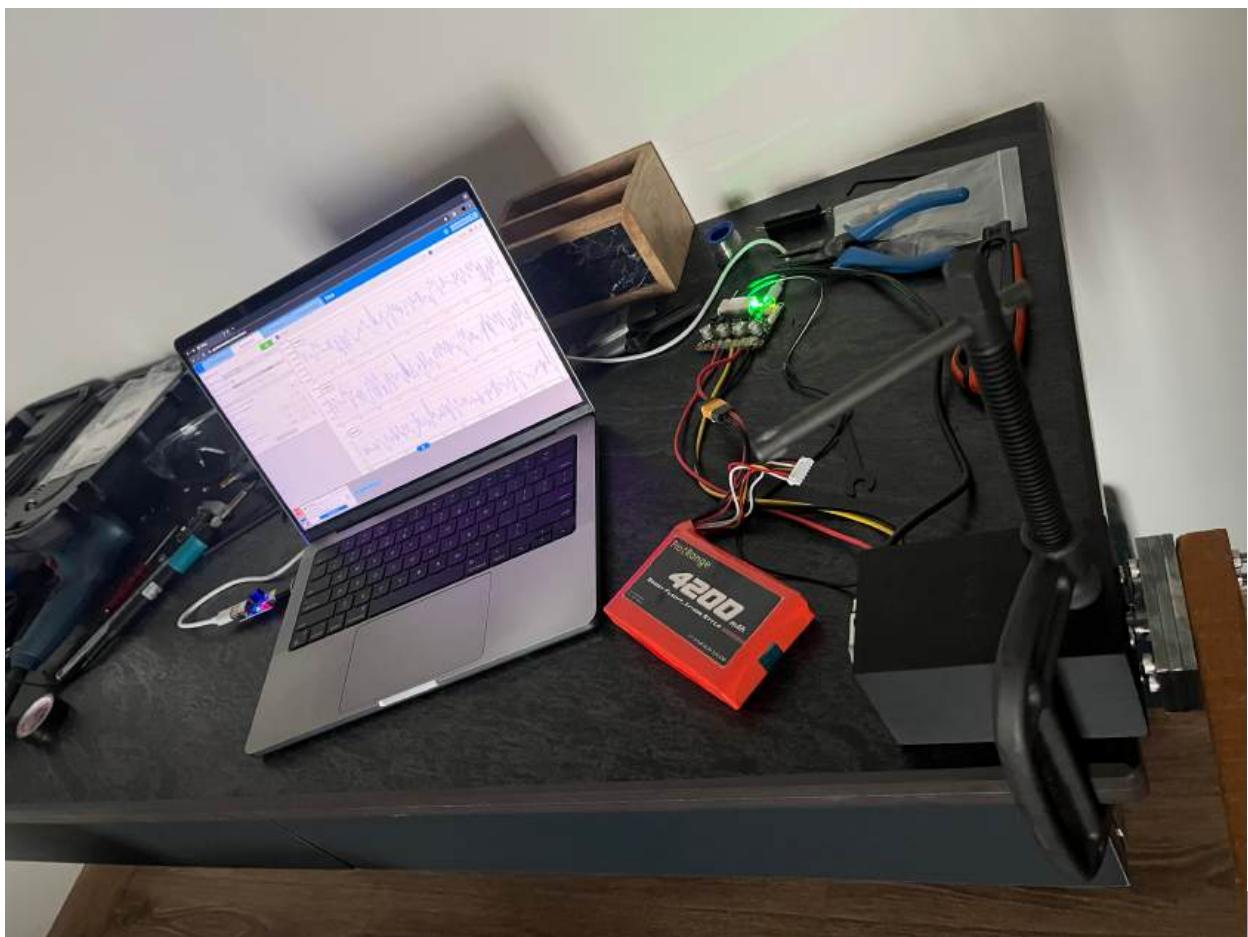
Chapter 5: Testing (and failure)

(March 2025)



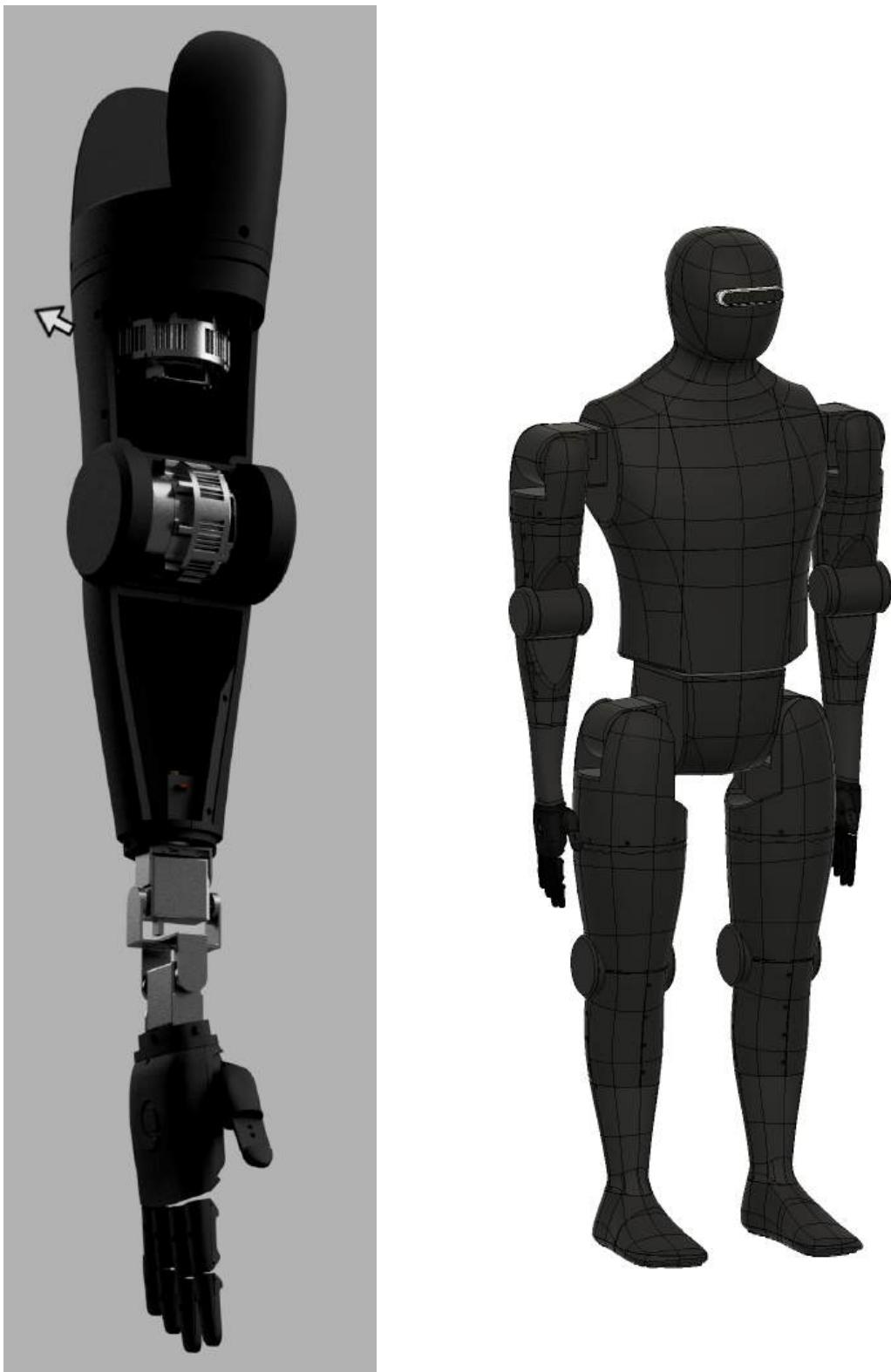


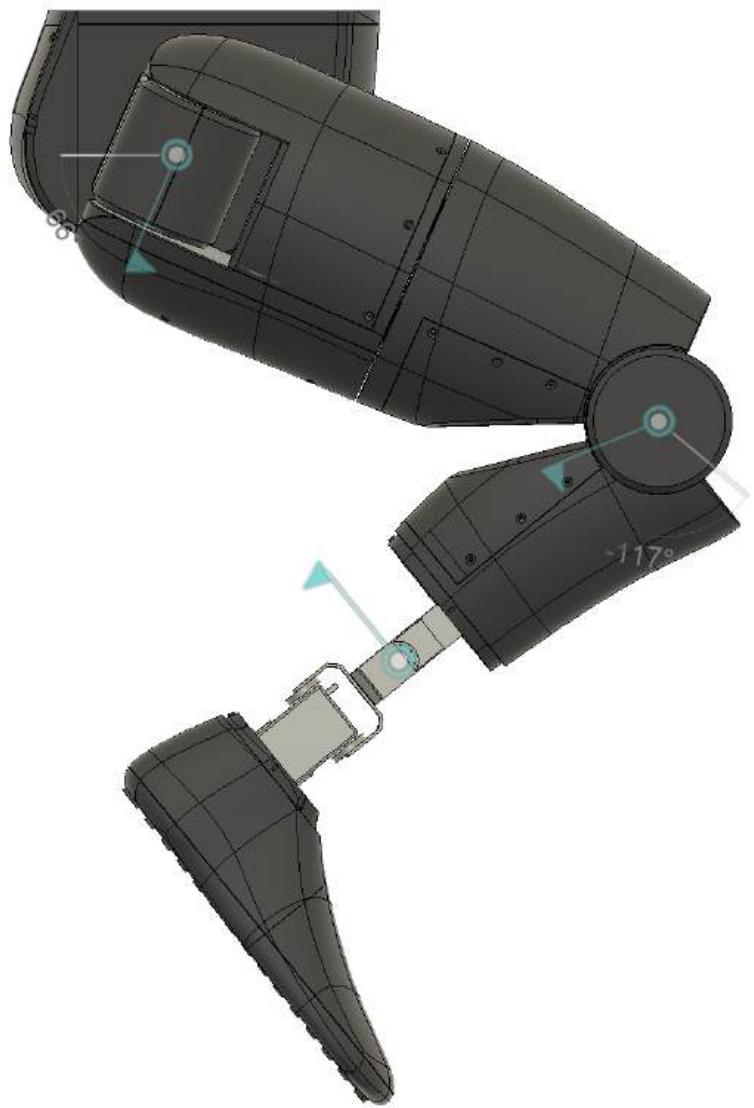
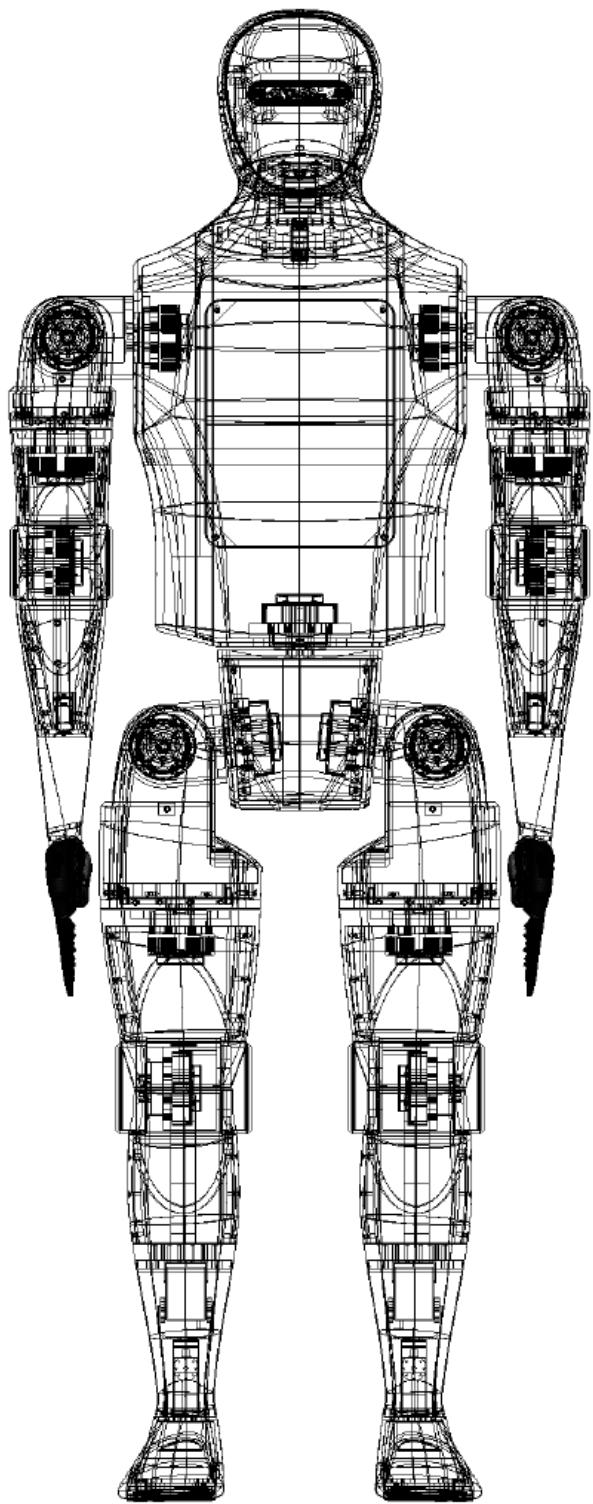




Chapter 6: Back to the Drawing Board

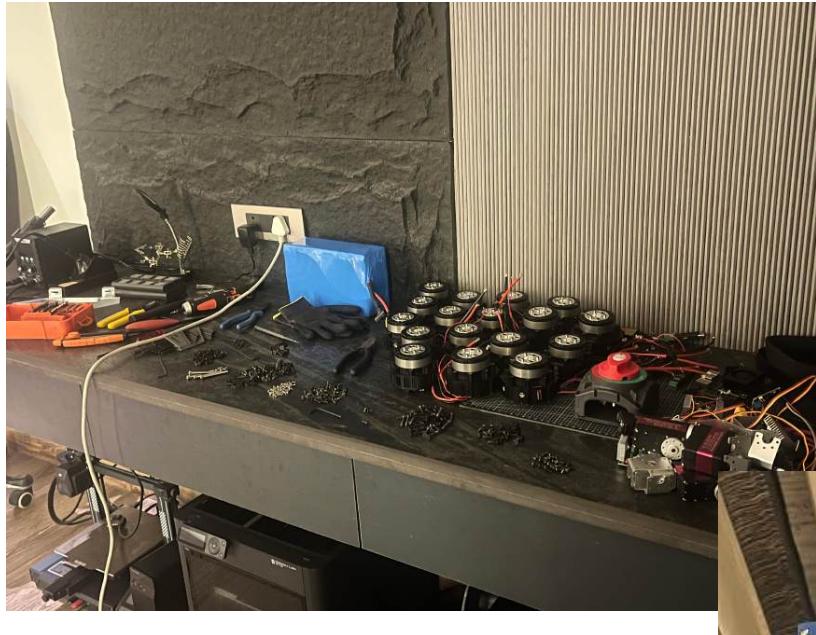
(May 2025)

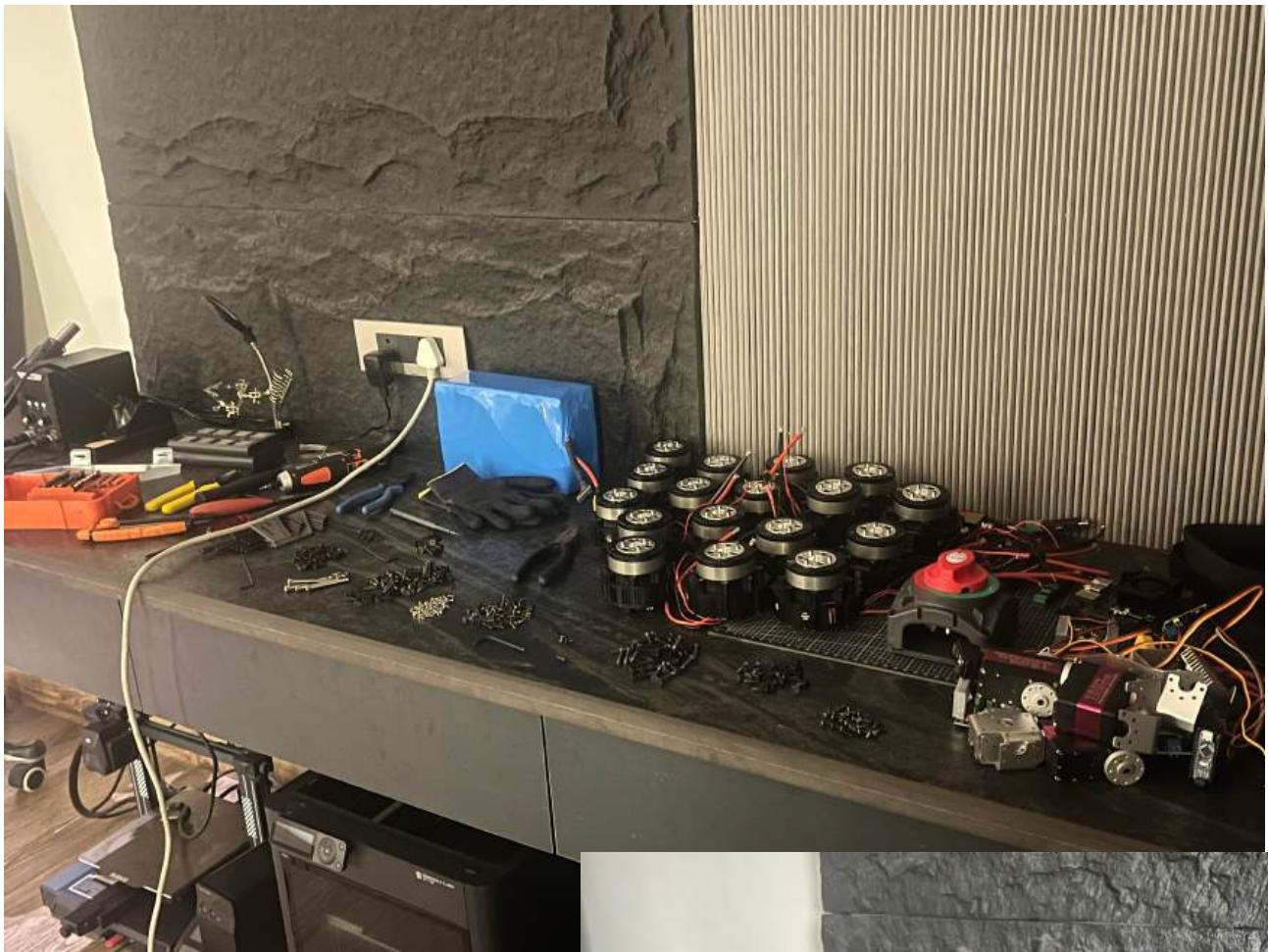




Chapter 7: Building the First Prototype

(July 2025)

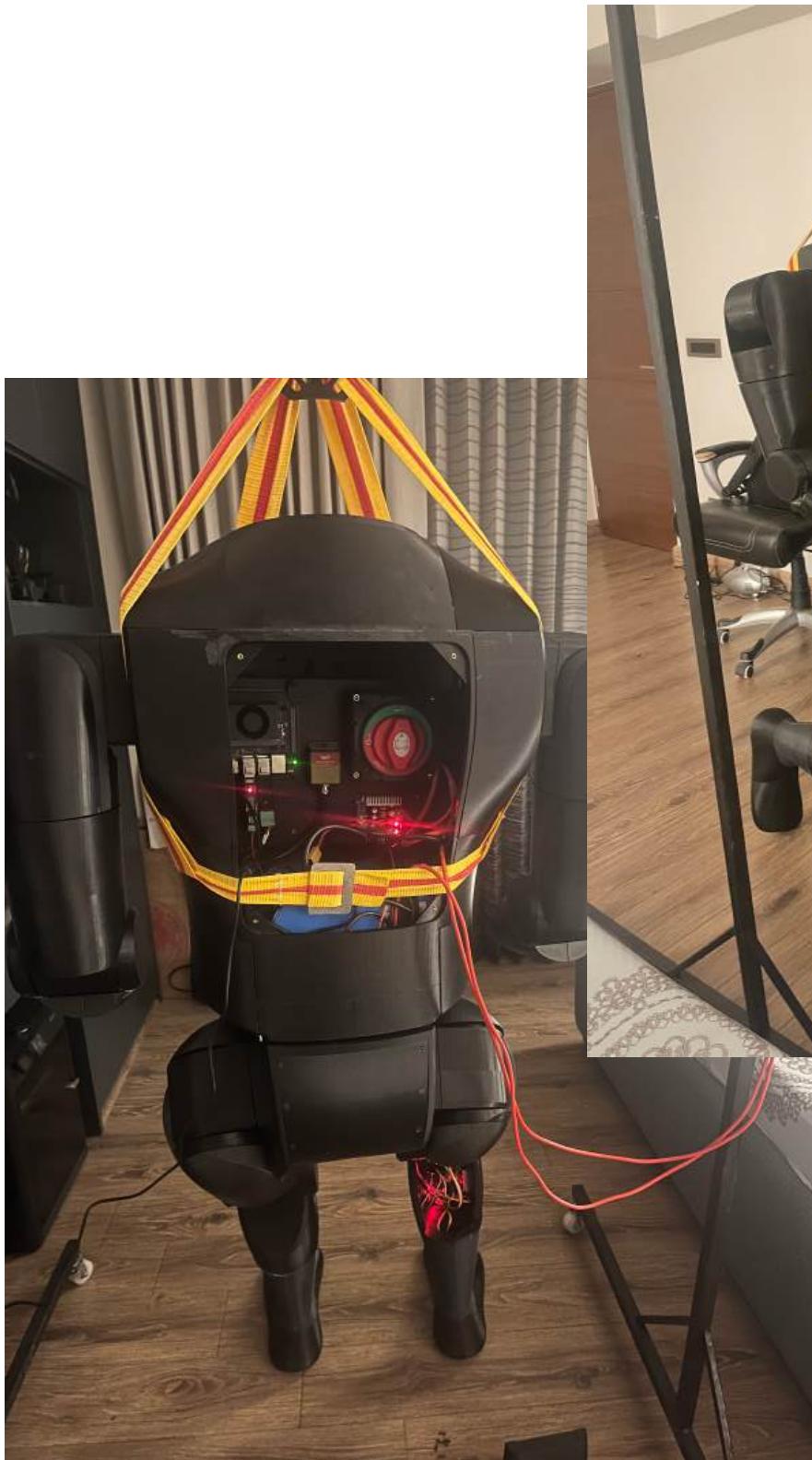






Chapter 8: First Prototype Complete

(September 2025)





Chapter 9: Programming

(October 2025)

The screenshot shows a code editor interface with several Python files open in tabs. The current file is `imu.py`. The code defines a `IMUData` class with fields for acceleration, angular velocity, angles, and timestamp. It also includes a `IMUReader` class for reading data from IMU sensors. A code example demonstrates how to use the `IMUReader` class to read data from a serial port.

```
import serial
import struct
import threading
import time
from dataclasses import dataclass
from typing import Optional, Callable, Tuple
from enum import IntEnum

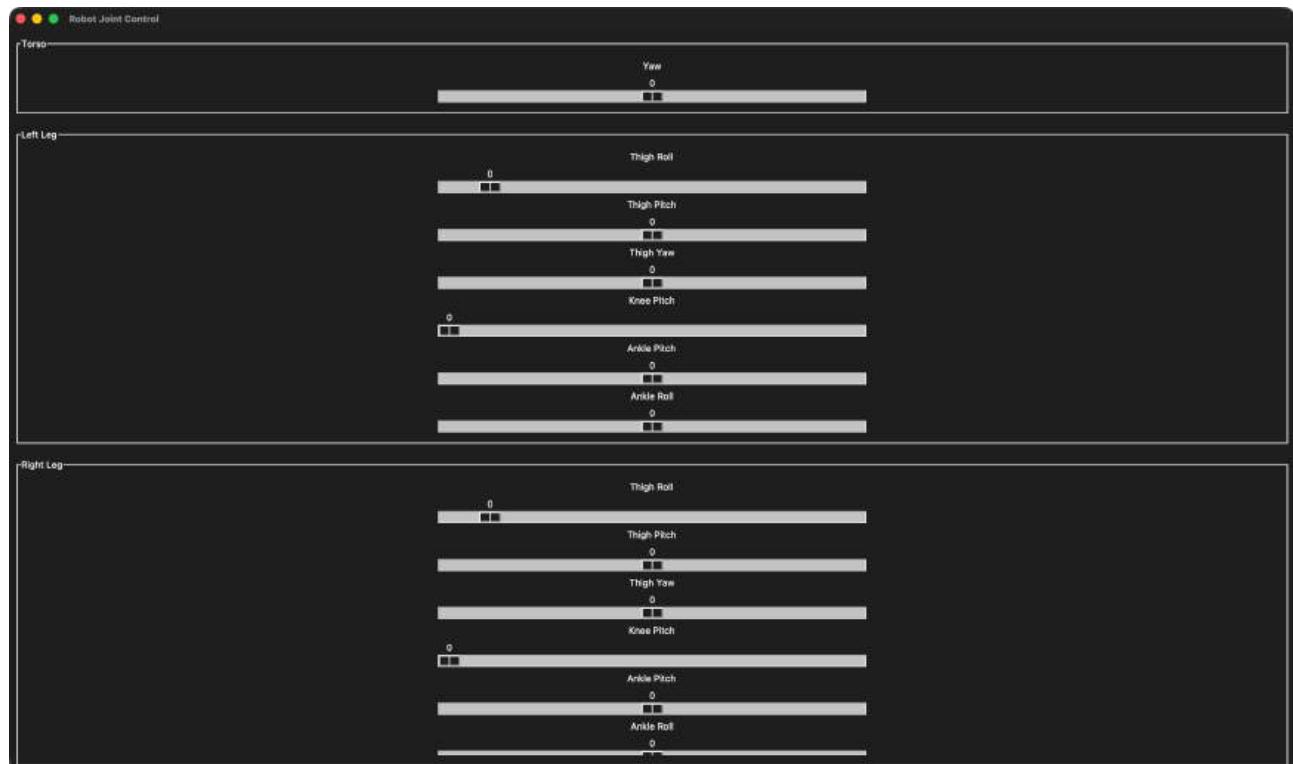
class IMUData(Enum):
    ACCELERATION = 0x01
    ANGULAR_VELOCITY = 0x02
    ANGLES = 0x03

    @dataclass
    class IMUData:
        """Container for IMU sensor data"""
        acceleration: Tuple[float, float, float] = (0.0, 0.0, 0.0)
        angular_velocity: Tuple[float, float, float] = (0.0, 0.0, 0.0)
        angles: Tuple[float, float, float] = (0.0, 0.0, 0.0)
        timestamp: float = 0.0

    class IMUReader:
        """A user-friendly library for reading data from IMU sensors.

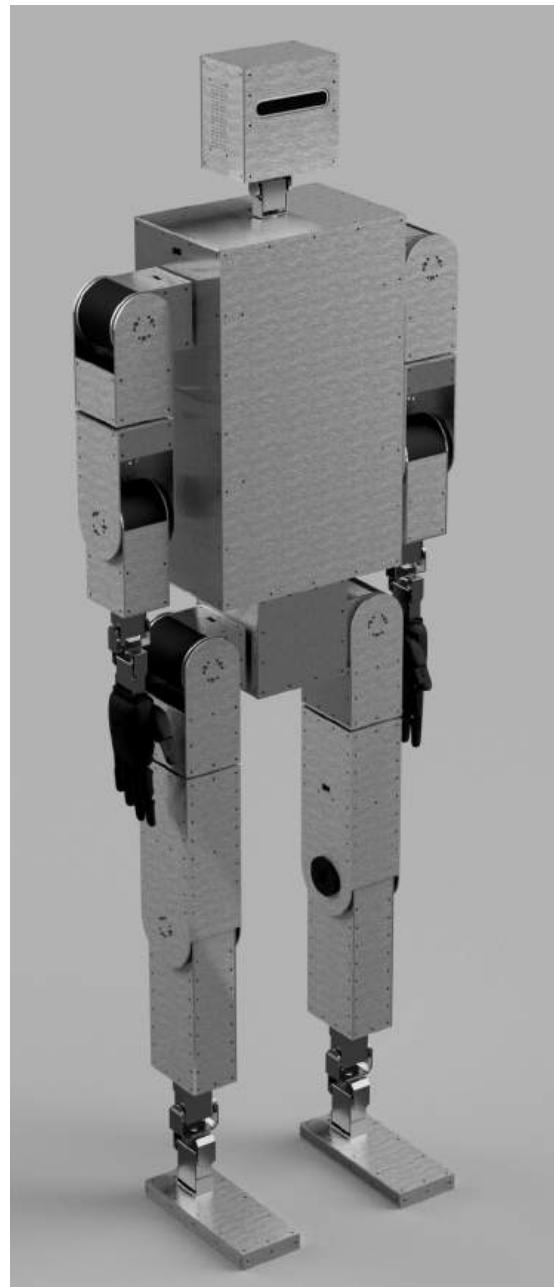
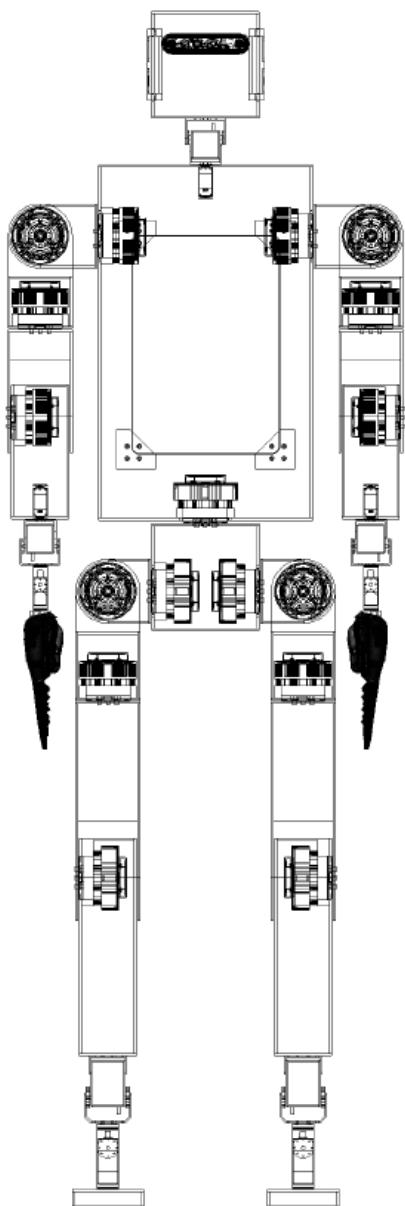
        Example usage:
        >>> imu = IMUReader(port="/dev/cu.usbserial-148")
        >>> imu.start_reading()
        >>> data = imu.get_latest_data()
        >>> print(f"Rpl: {data.angles[0]:.2f}, Pitch: {data.angles[1]:.2f}, Yaw: {data.angles[2]:.2f}")
        >>> imu.stop_reading()
        ...
        """

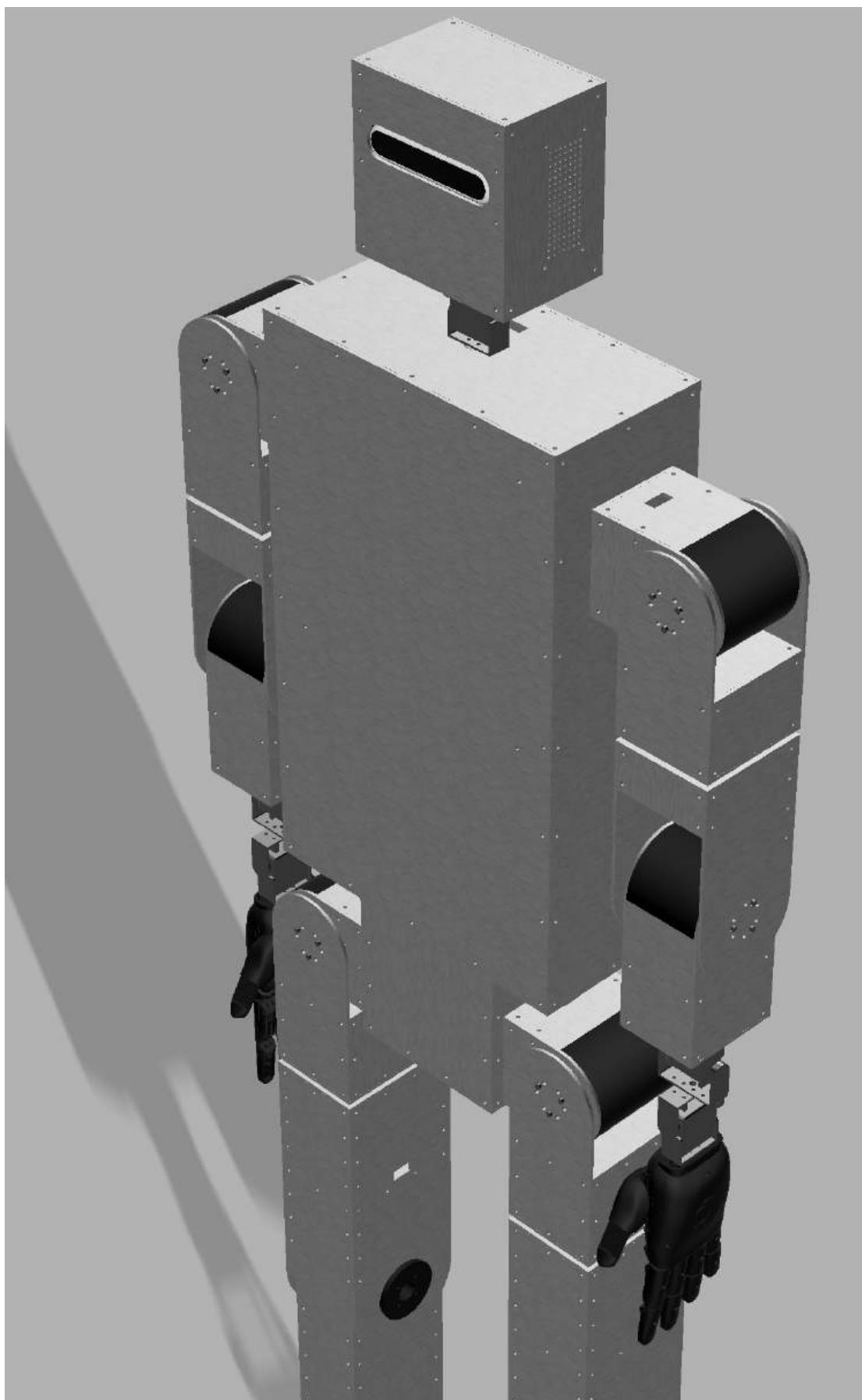
PROJECTS OUTPUT DEBUG CONSOLE TERMINAL PORTS
/home/krish/Krish-MacBook-Pro Code %
```



Chapter 10: Designing the Second Prototype

(October 2025)





Chapter 11: Building the Second Prototype

(Ongoing)





