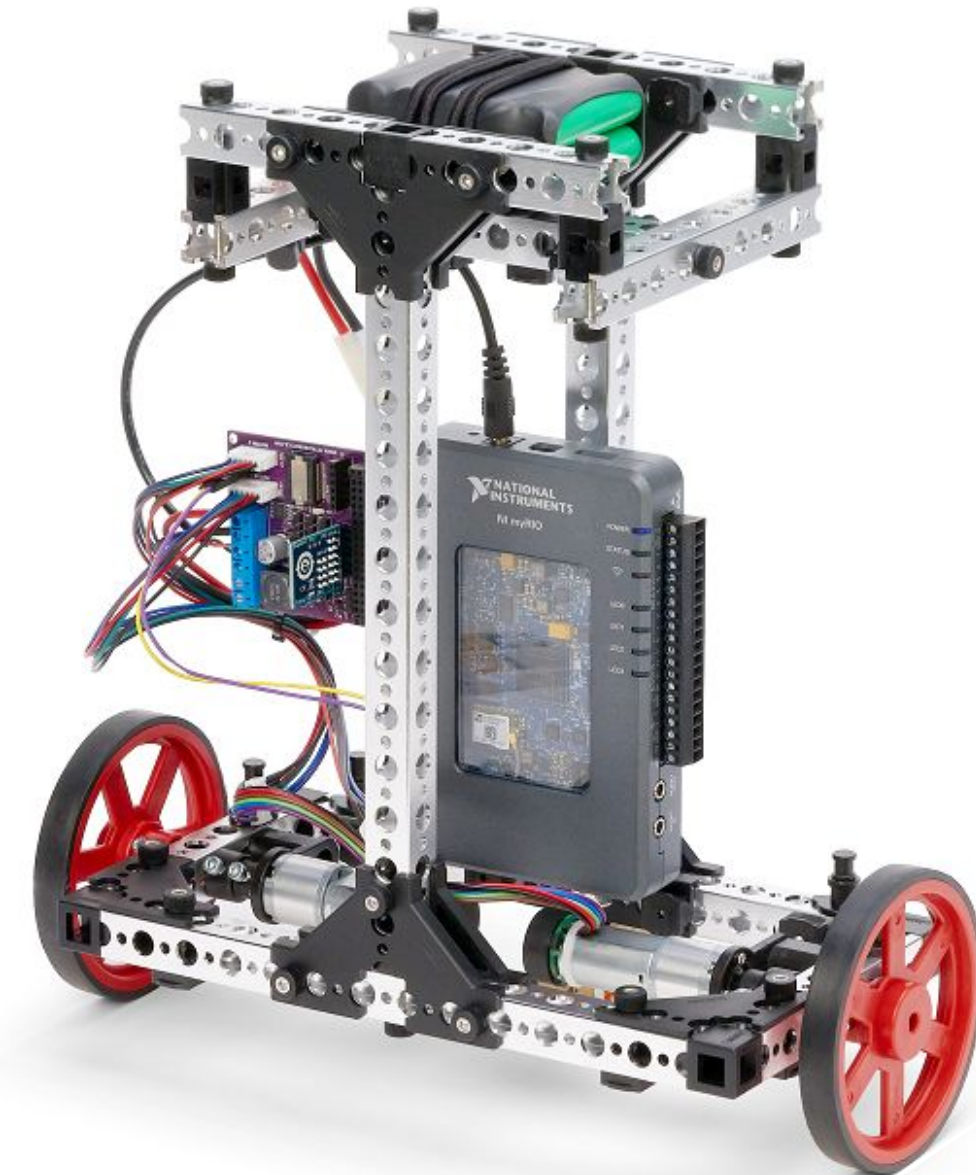


MICROPROCESSOR AND  
MICROCONTROLLER

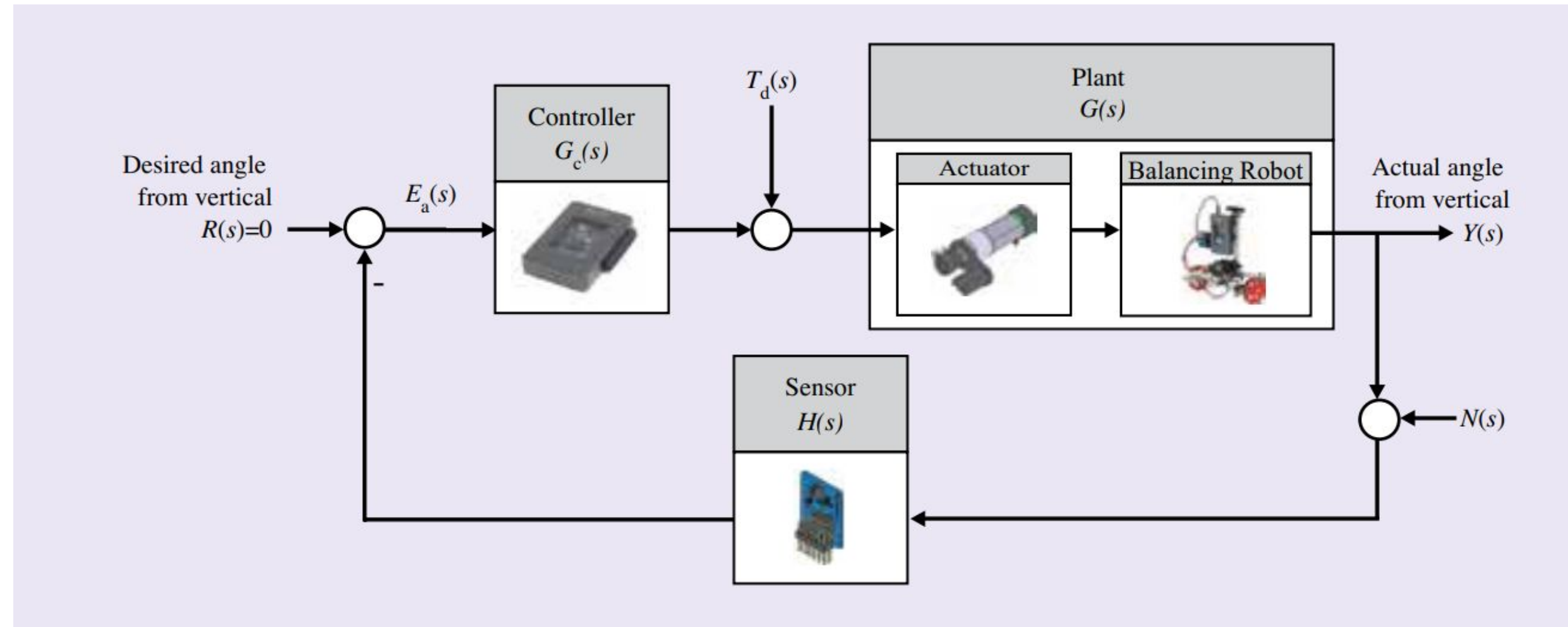
# ASSIGNMENT PRESENTATION



# SELF BALANCING ROBOT



# Working



Plant	Self-balancing robot
Sensor	Accelerometer, gyroscope, and encoder sensors
Actuator	DC servo motors
Performance	Robust stability, disturbance rejection, and measurement noise attenuation
Design objectives	Tune the control system by adjusting PD gain constants & stabilize the robot at the vertical
Reference inputs	Regulation to zero angle (vertical pose)

# Robot assembling

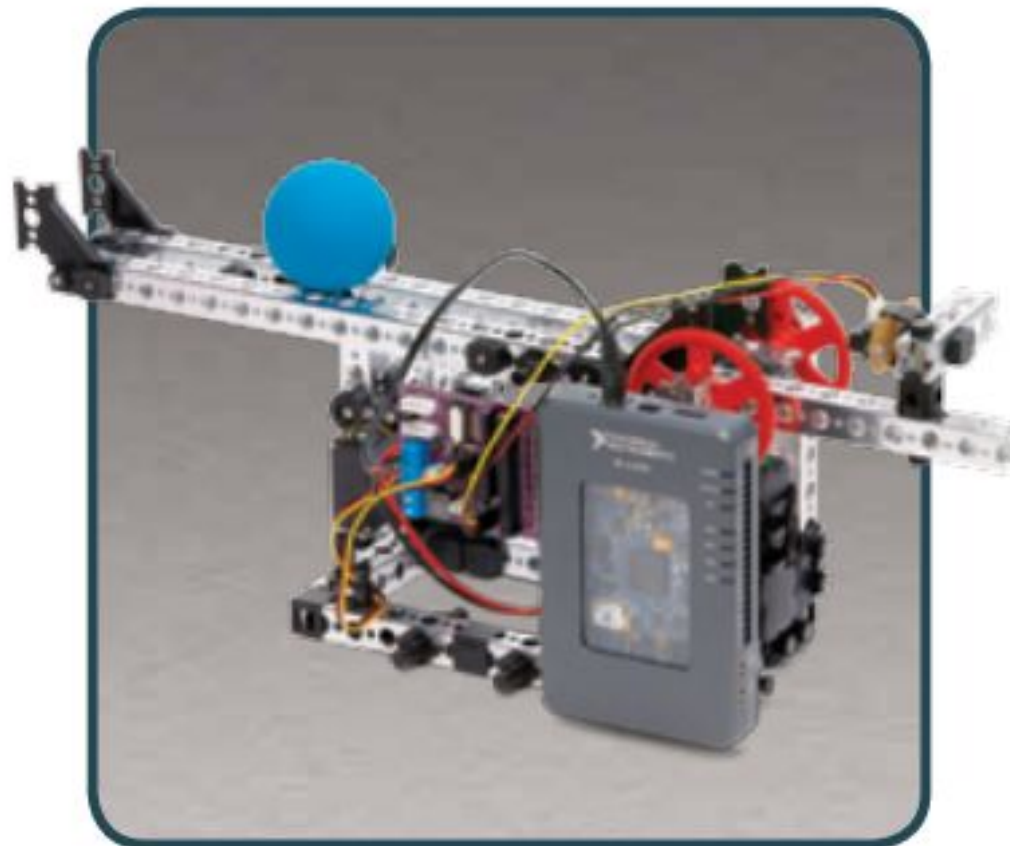
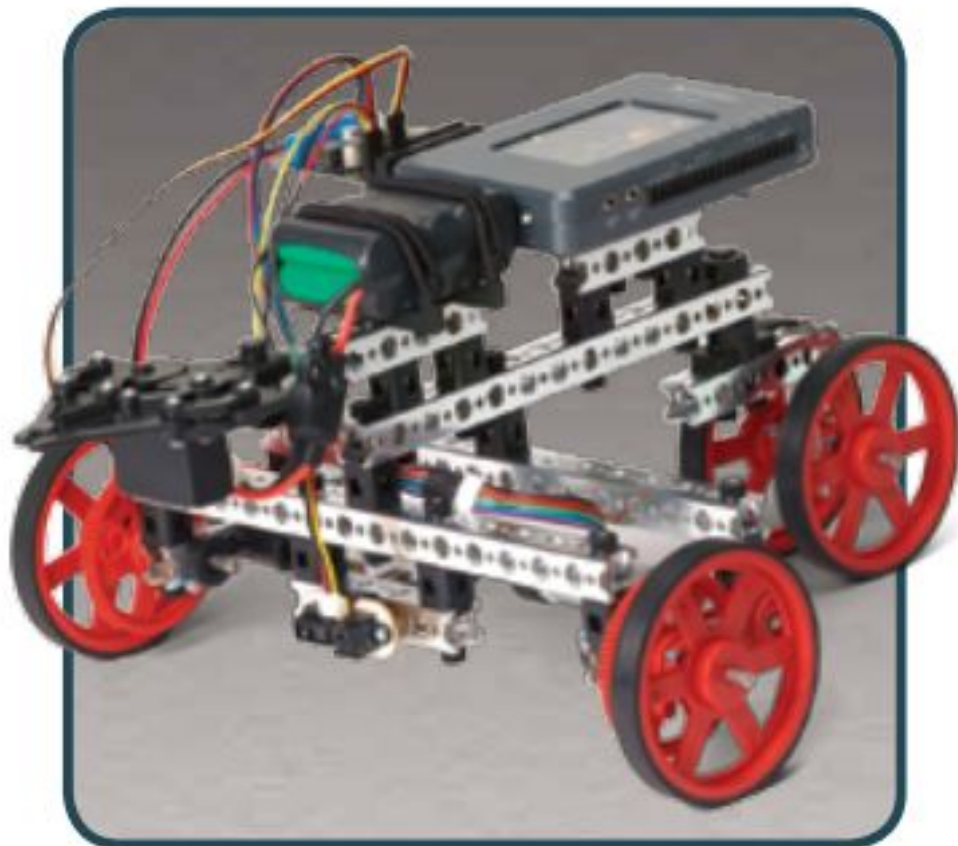






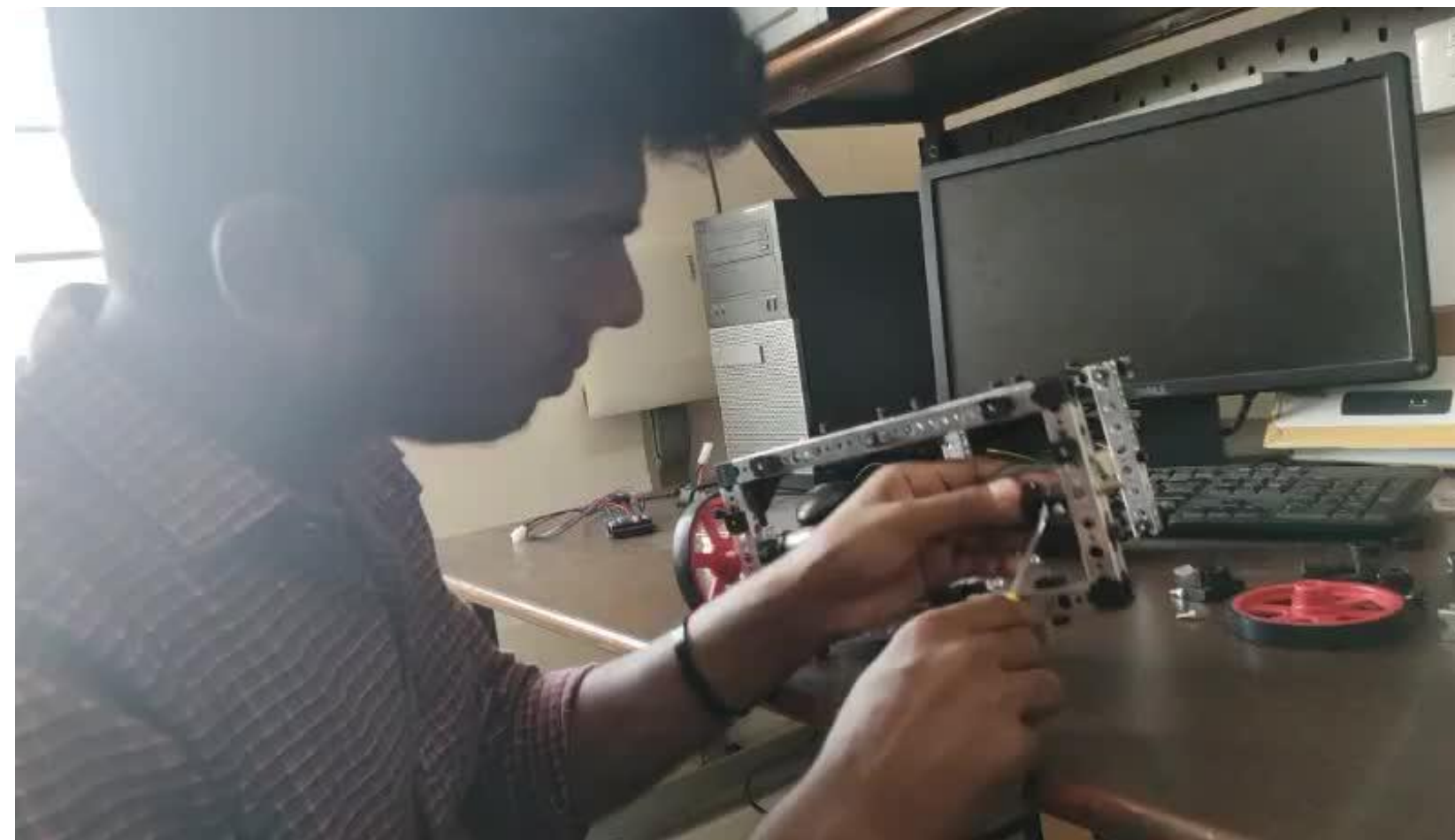
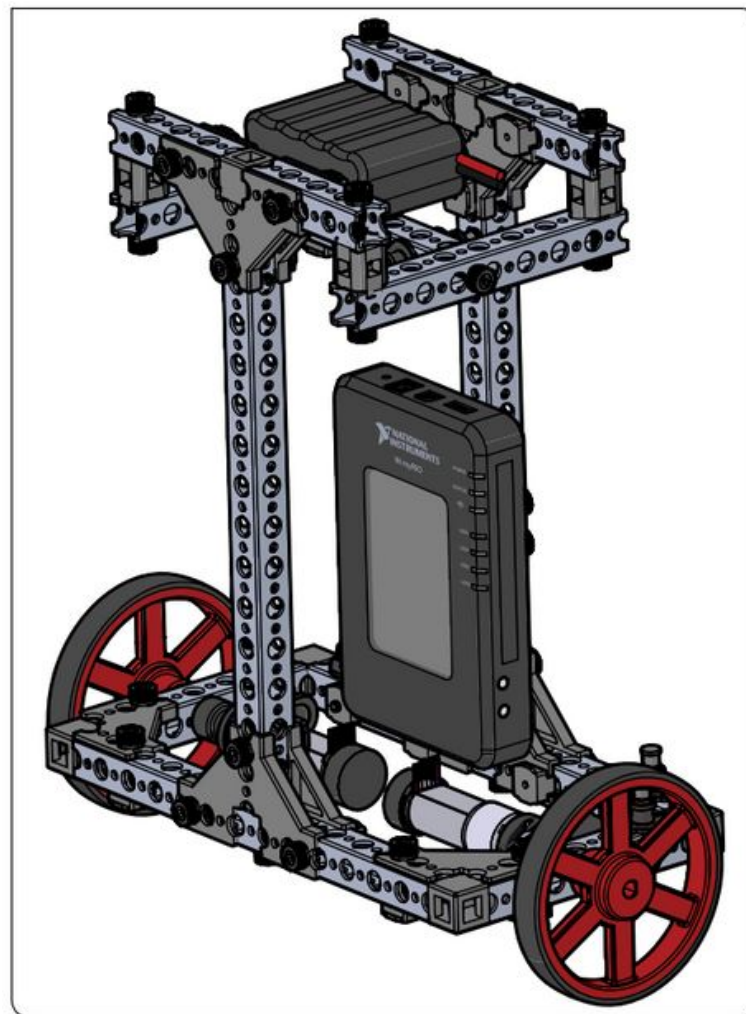
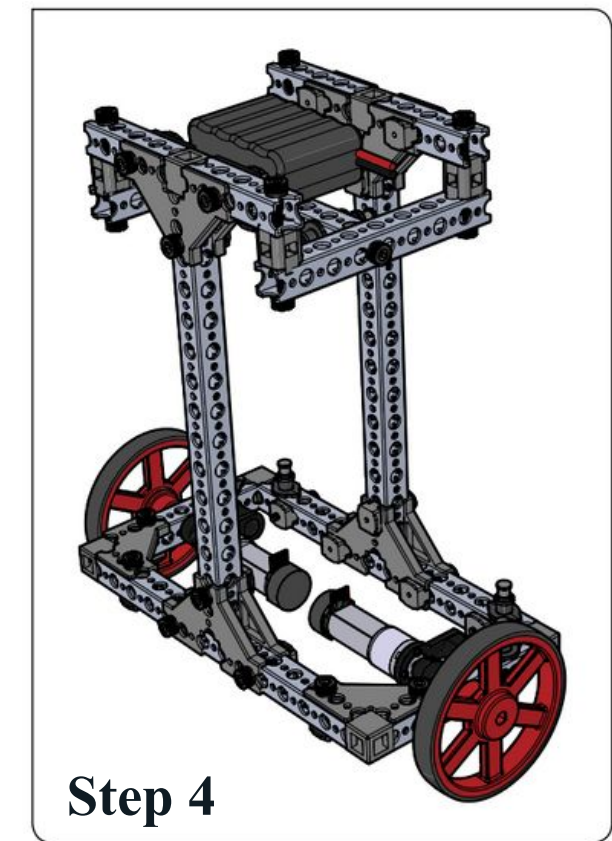
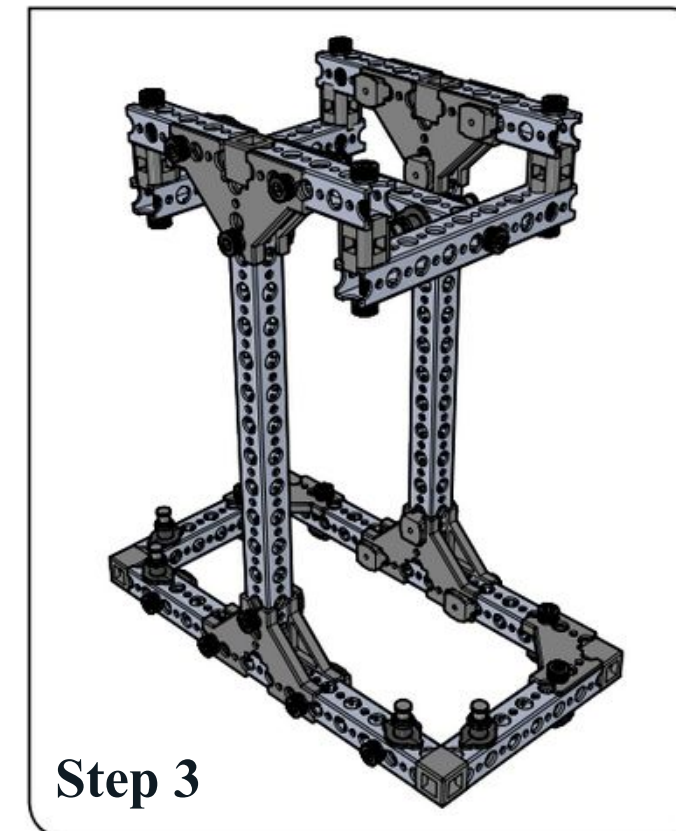
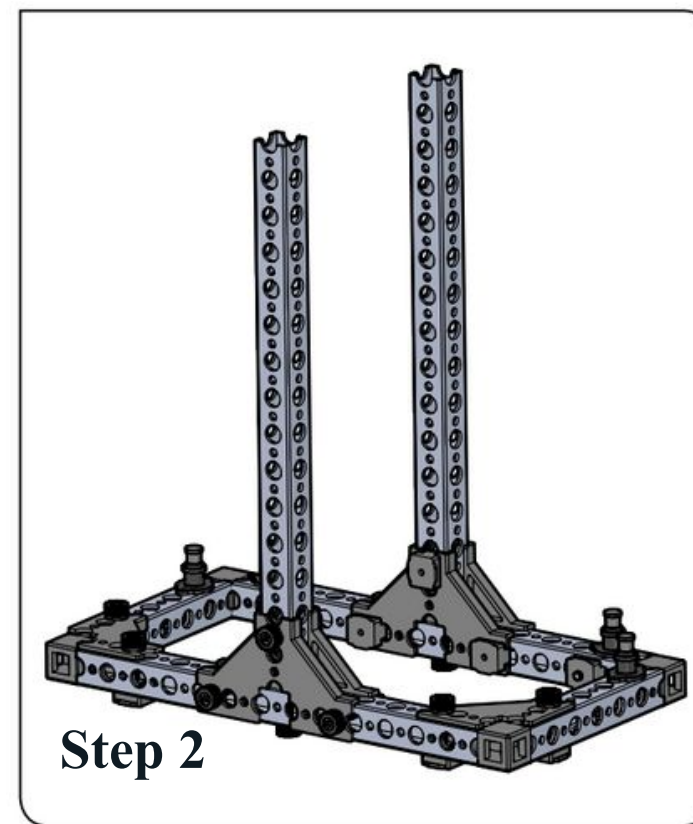
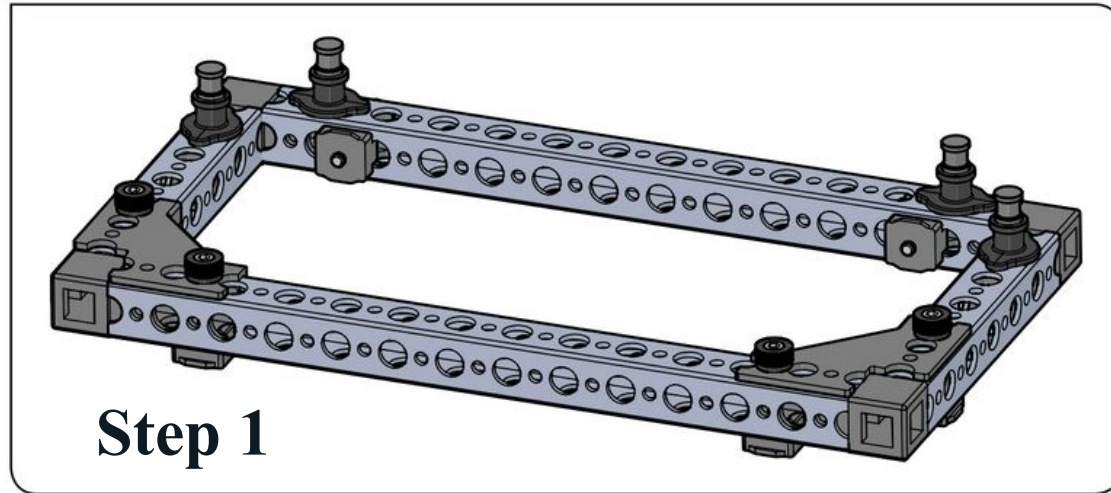
***Robot Builder's Guide***

**for NI myRIO**



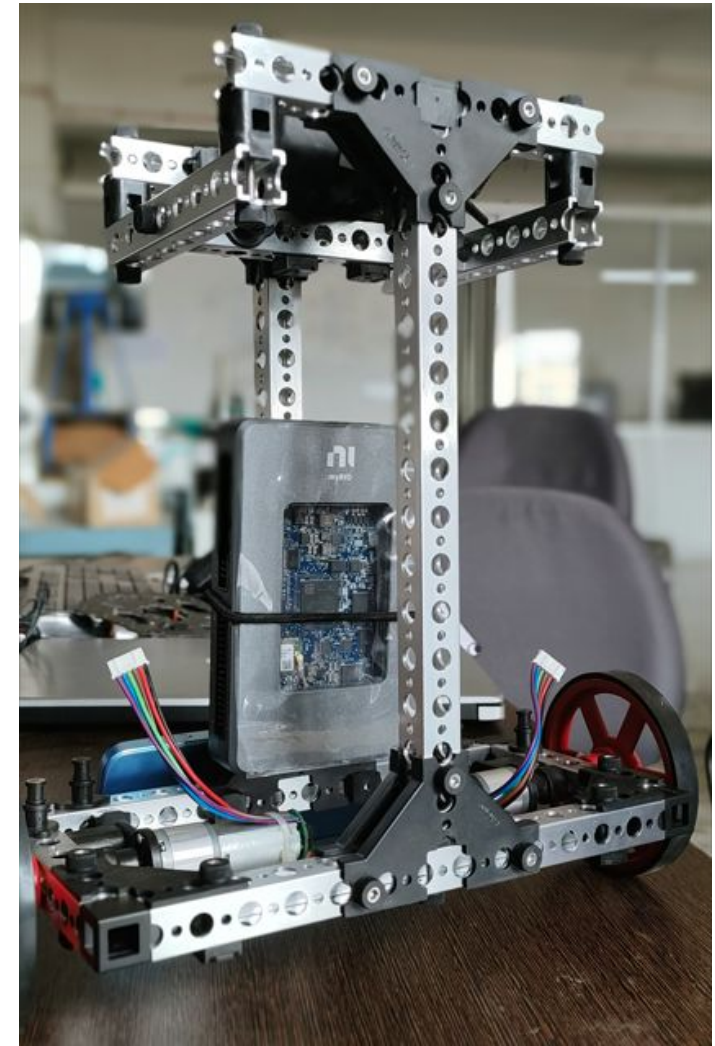
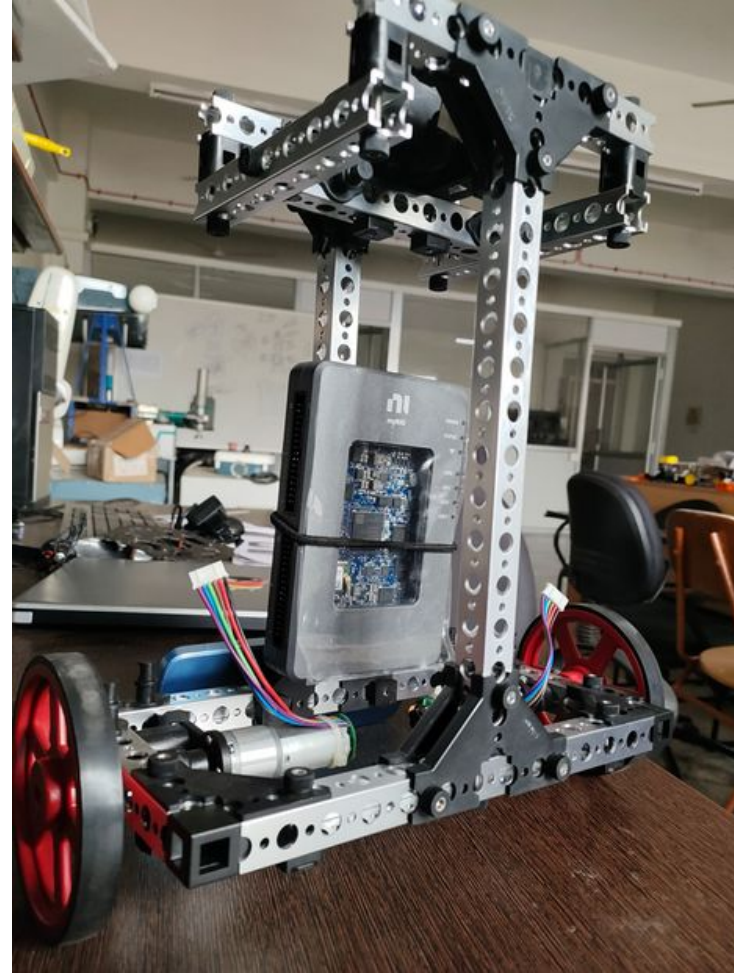
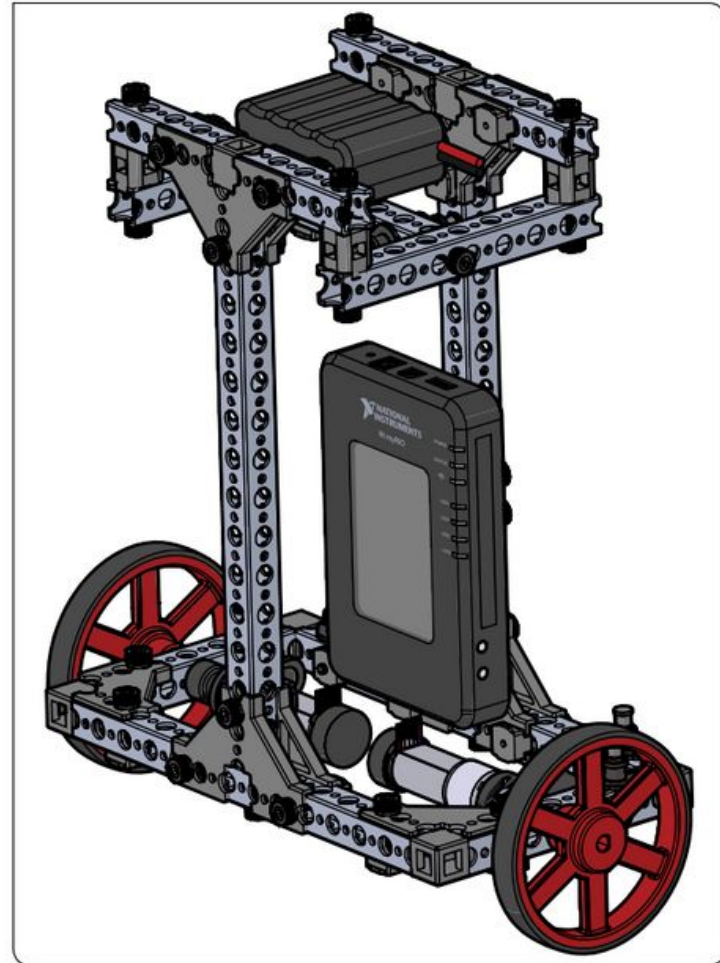


# Robot assembling

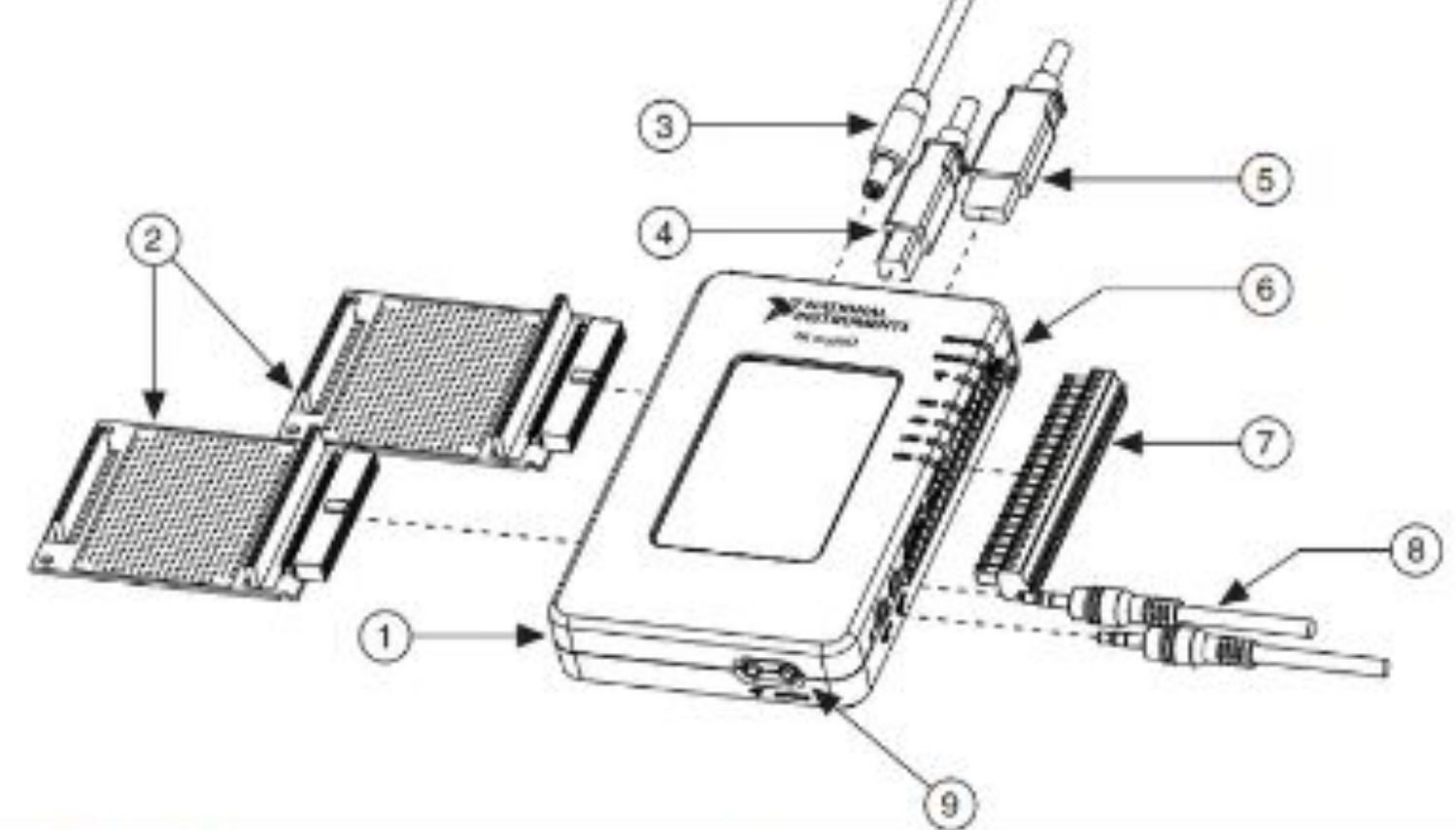
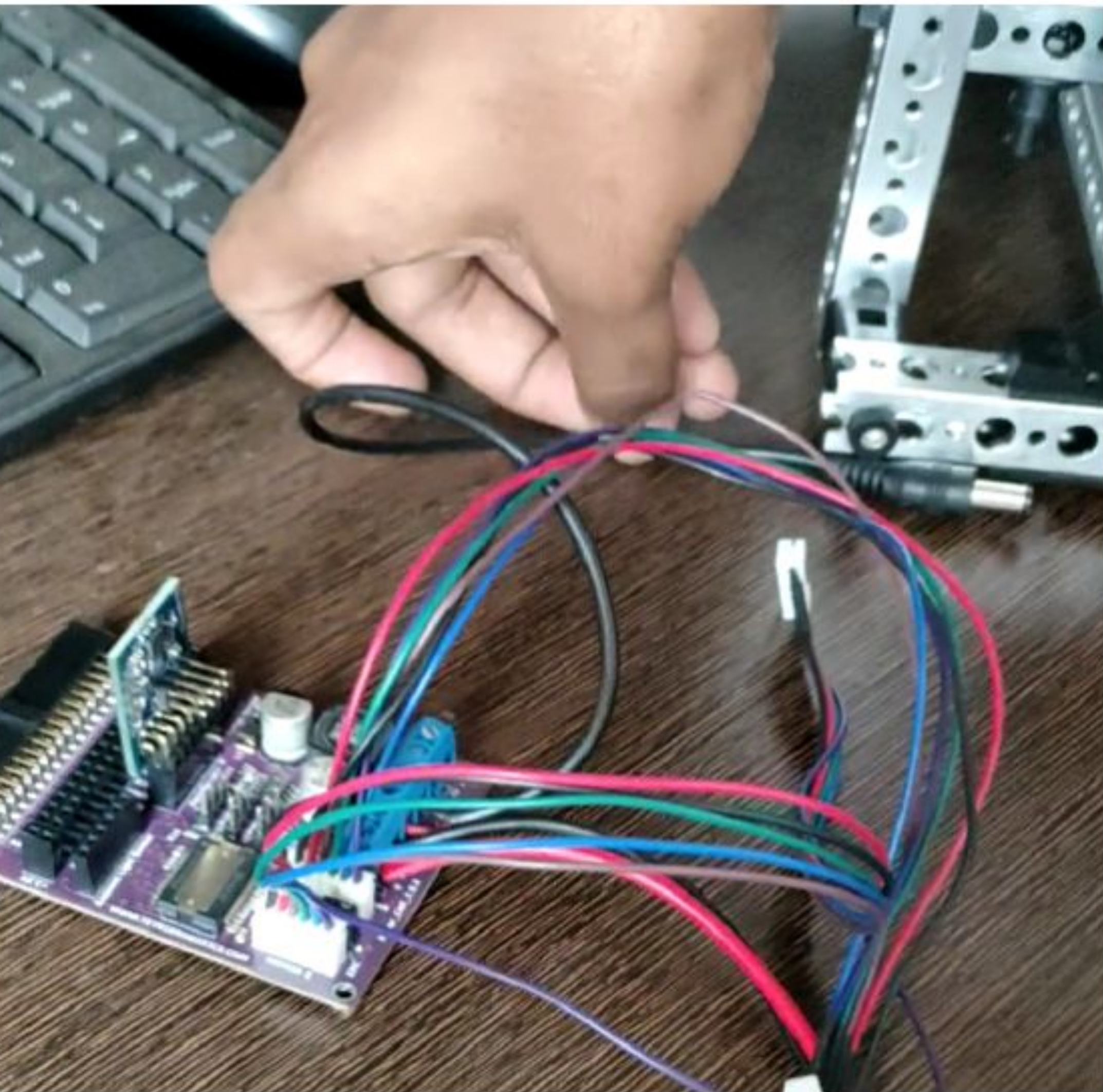




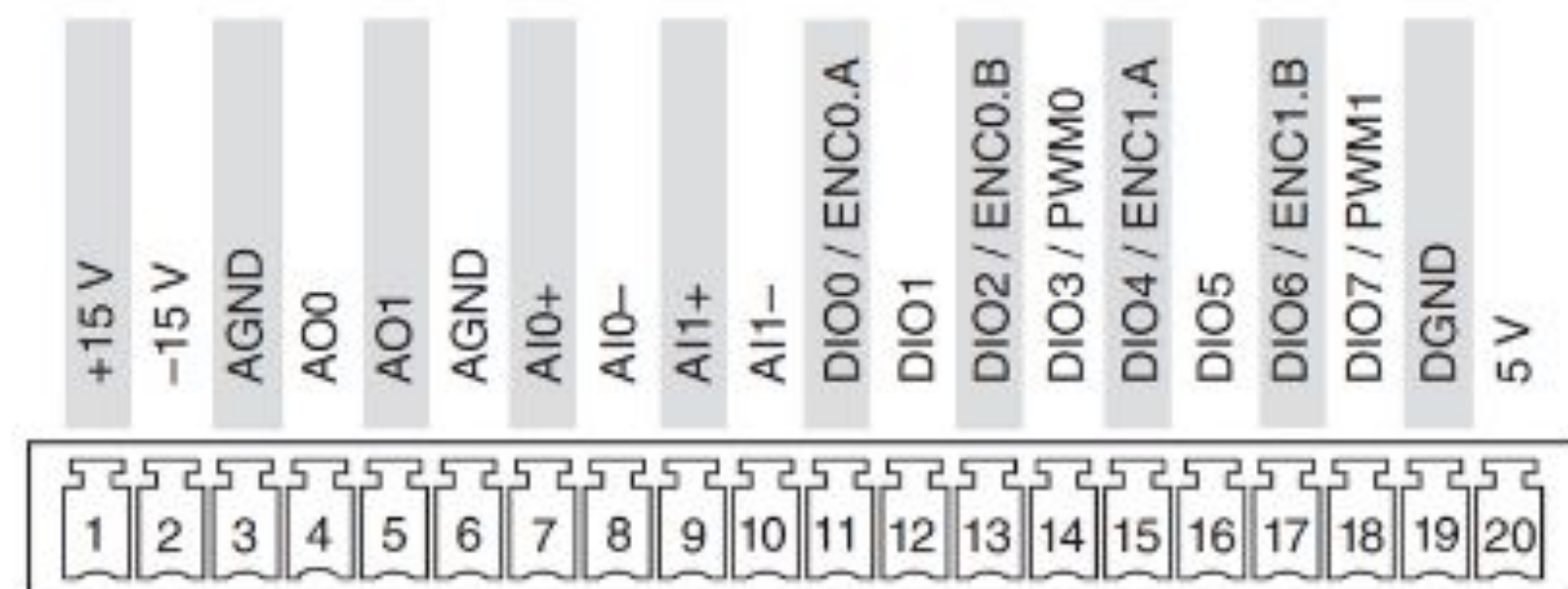
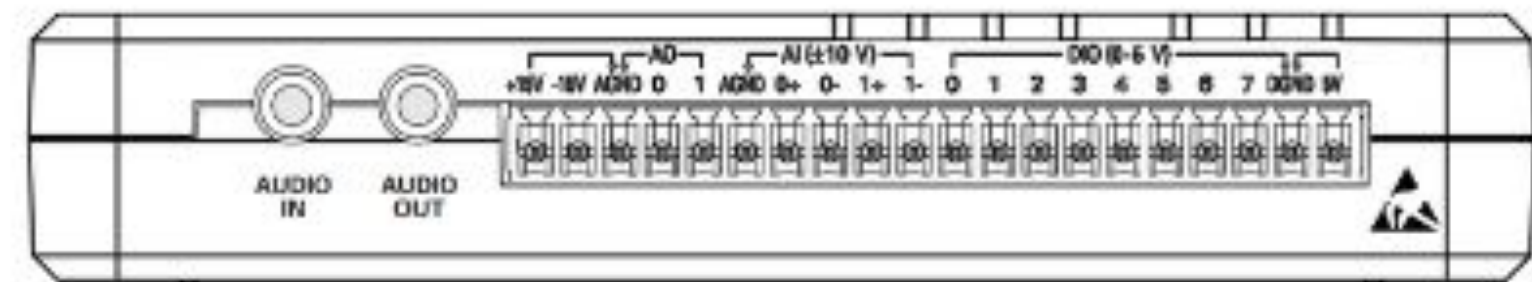
# Finished assembly







- |   |  |   |   |
|---|--|---|---|
| 1 | NI myRIO-1900  | 6 | LEDs  |
| 2 | myRIO Expansion Port (MXP) Breakouts (One Included in Kit) | 7 | Mini System Port (MSP) Screw-Terminal Connector |
| 3 | Power Input Cable  | 8 | Audio In/Out Cables (One Included in Kit)       |
| 4 | USB Device Cable   | 9 | Button0   |
| 5 | USB Host Cable (Not Included in Kit)                       |   |   |

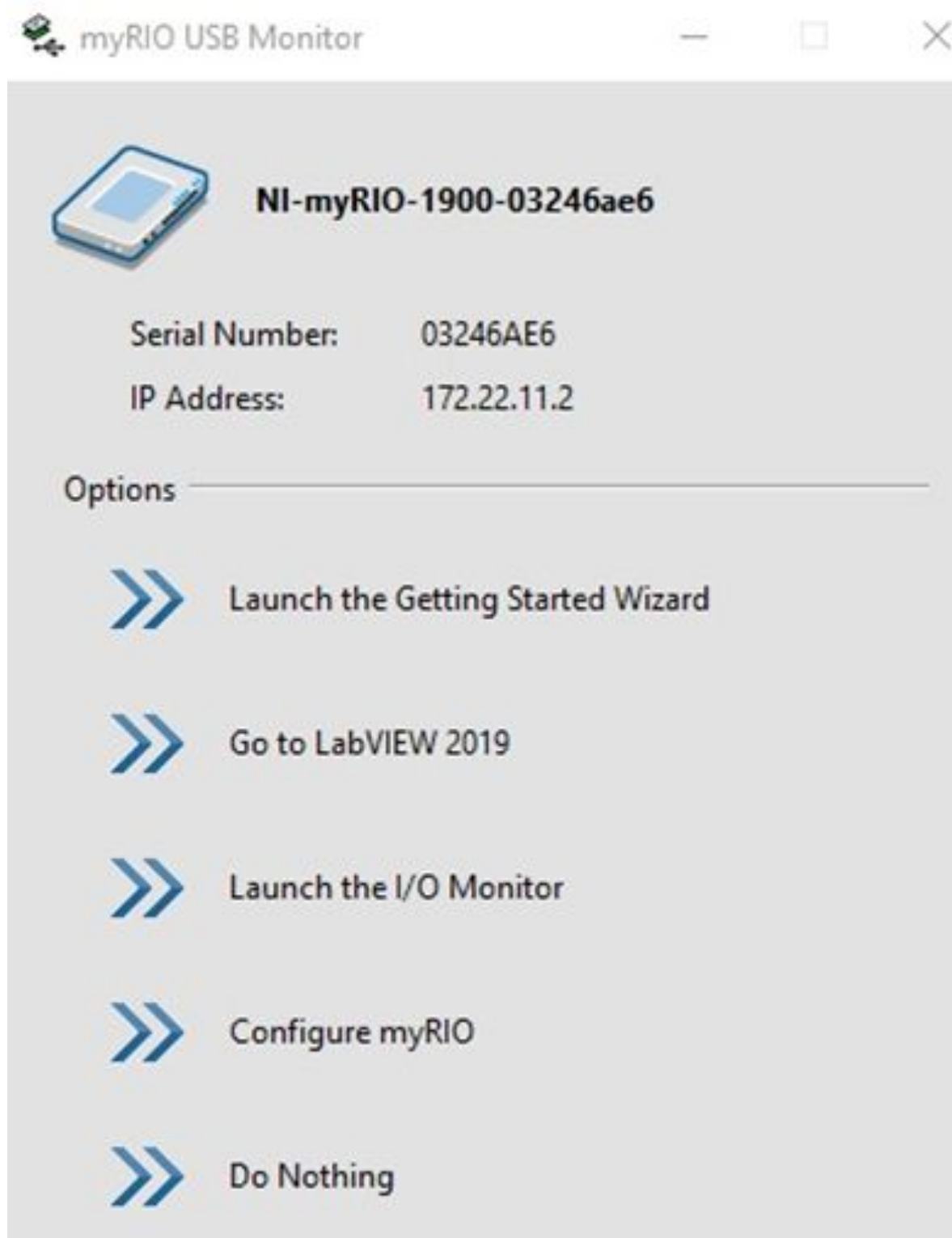




# Setting up Labview Software





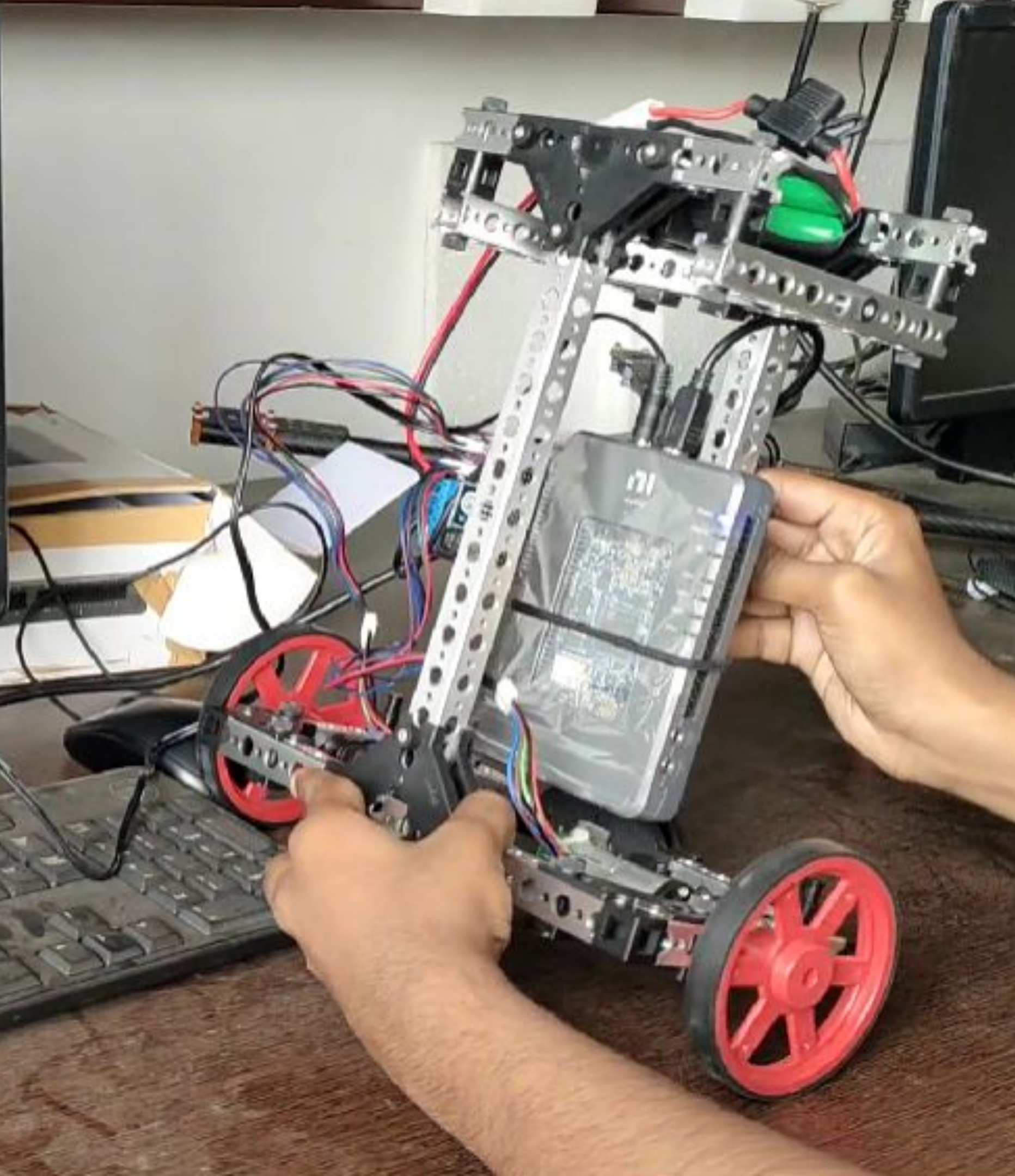
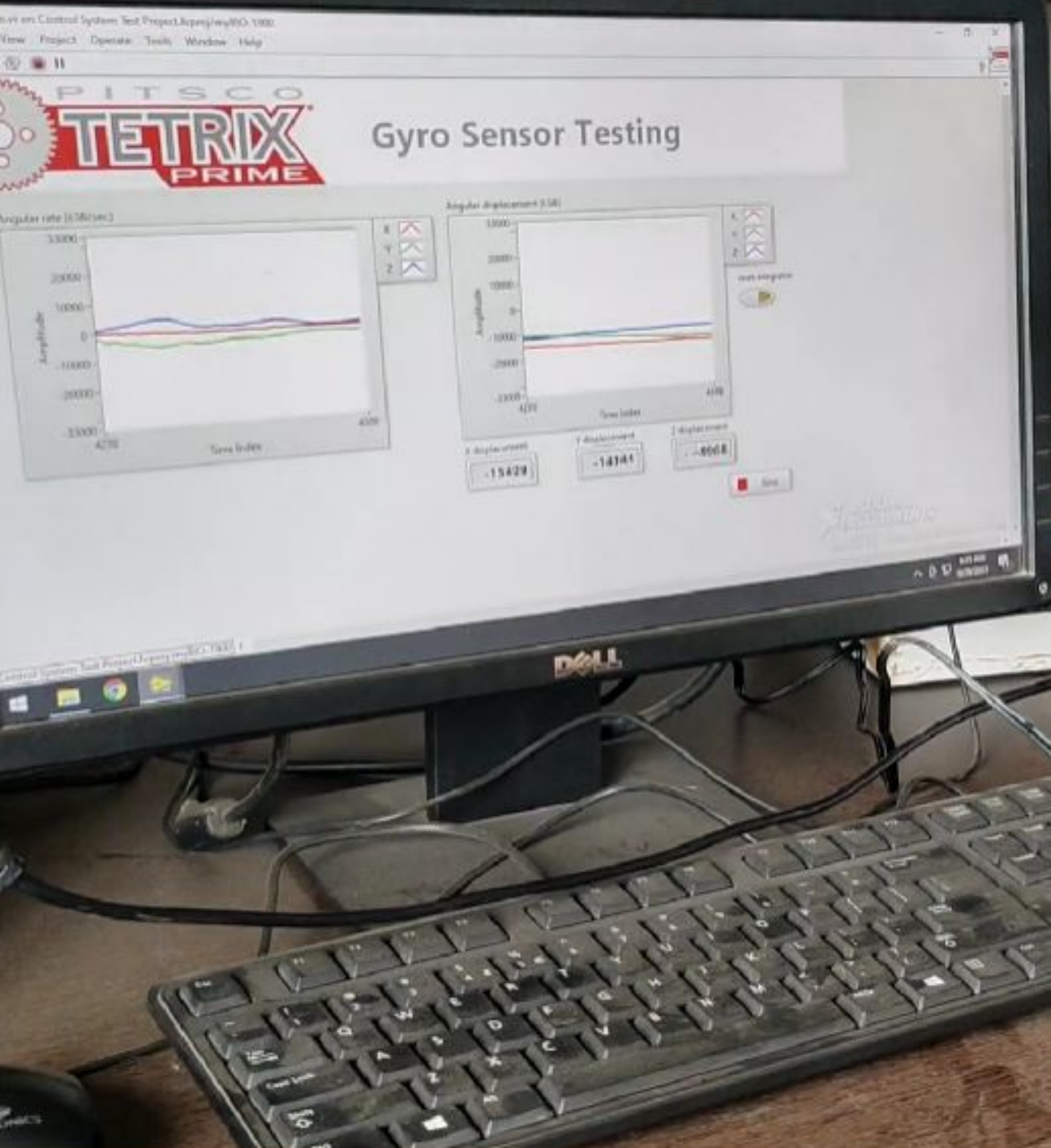




# GYRO SENSOR TESTING









# DC MOTOR TESTING





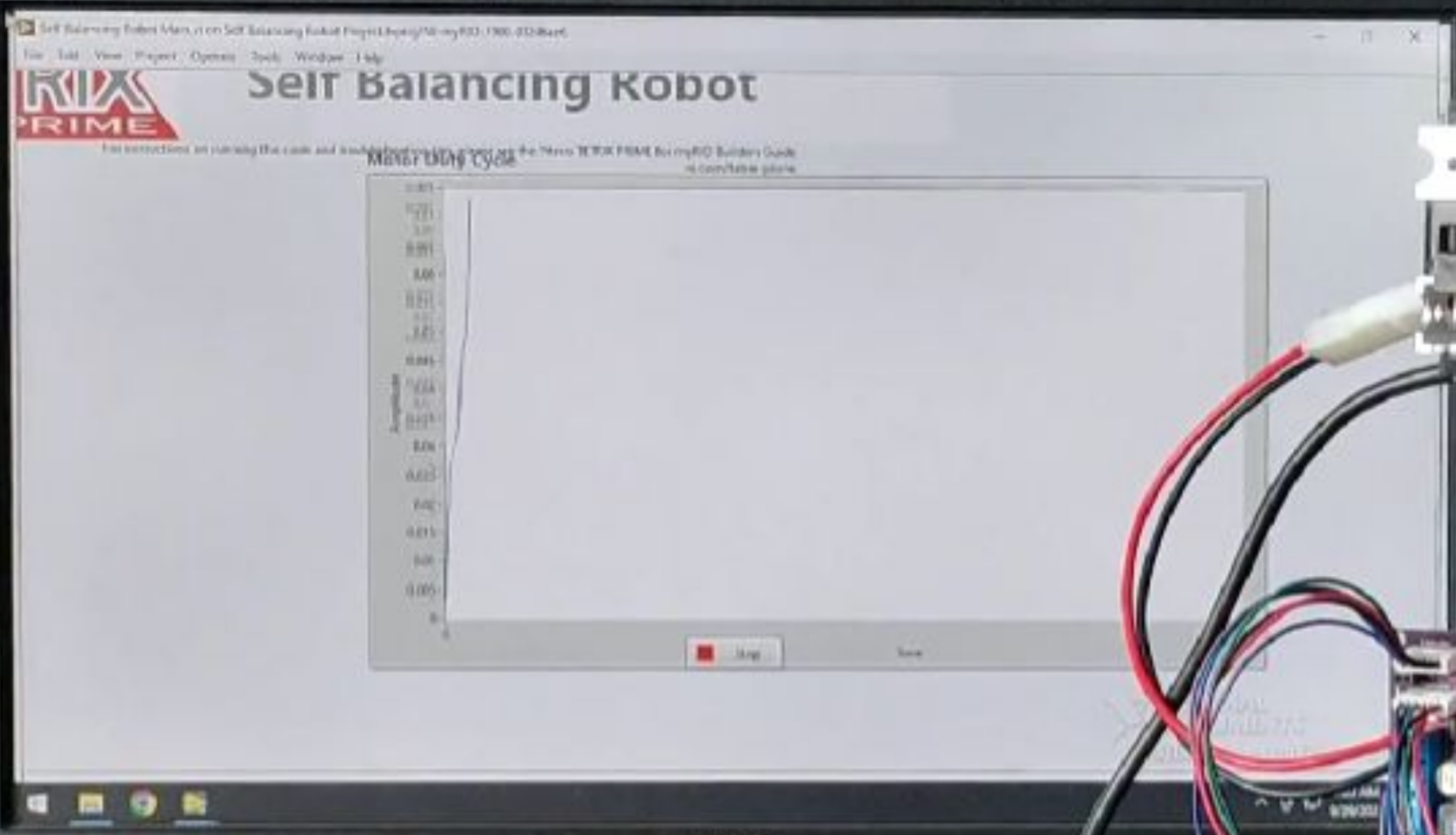
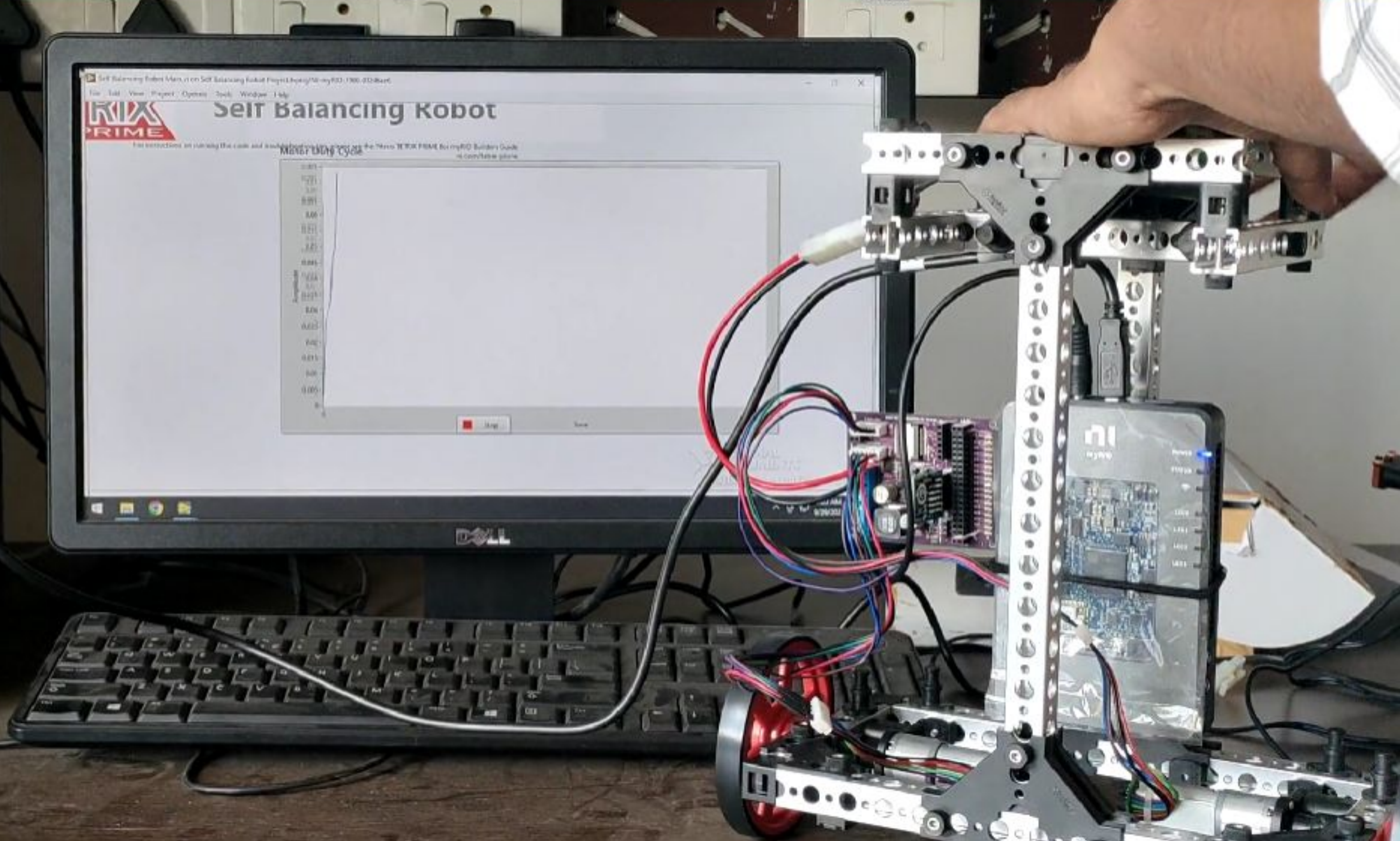


# RUNNING

## Self balancing robot MAIN VI











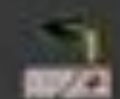
## Recently added



Vision Assistant 2019 (32-bit)



Vision Assistant 2019 (64-bit)



Vision Texture Training

Expand

## Most used



NI LabVIEW 2019 (32-bit)



Google Chrome



File Explorer



Word



NI MAX



#



3D Viewer



NI-myRIO-1900-03246ae6 - Measurement & Automation Explorer

File Edit View Tools Help

- My System
  - Devices and Interfaces
  - Software
- Remote Systems
  - NI-myRIO-1900-03246ae6

Restart Save Refresh Set Permissions Log In

### Network Adapters

#### Ethernet Adapter usb0 (Primary)

Adapter Mode	TCP/IP Network
MAC Address	00:80:2F:34:5E:18
Configure IPv4 Address	DHCP Only
IPv4 Address	0.0.0.0
Subnet Mask	0.0.0.0
Gateway	0.0.0.0
DNS Server	0.0.0.0

[More Settings](#)

#### Wireless Adapter wlan0

Wireless Mode	Connect to wireless network
Country	India
MAC Address	00:80:2F:34:5E:19
Status	Connected to iQOO Z6 Pro.
Wireless Network	iQOO Z6 Pro
Network Type	Infrastructure
Security	Security settings are saved. <a href="#">Remove this network</a> <a href="#">Enter new security settings</a>

THank you !

Done by

21R218 - JAISURYA

21R226 - PRIYADHARSHAN

21R242 - SIVANESAN

