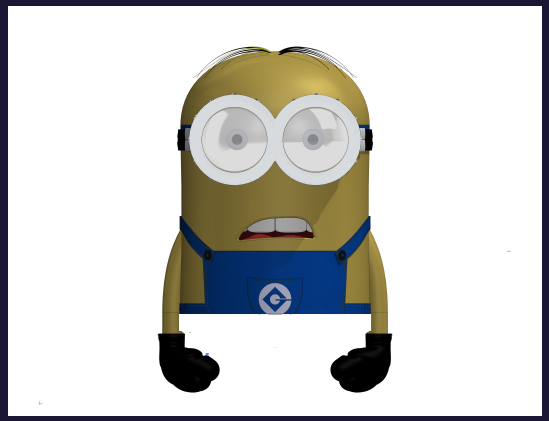
Robotics Studio MECE 4611
Spring 2024
Assignment III
Nicolino Primavera (ncp2136)
Submission: 2/19/24 at 7:30pm
Grace hours: 100:35 - 19:30 = 81
Bob the Minion
General Robot Rendering

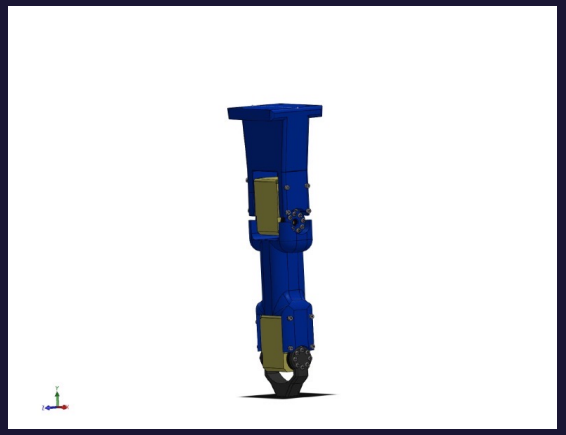
GrabCAD Designs – References

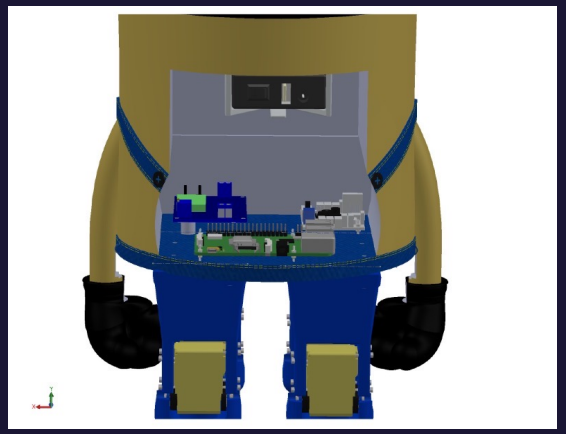
- LX-16A Metal Servos: https://grabcad.com/library/lewansoul-lx-16a-bus-servo-1
- Small Servo Controller Board: https://grabcad.com/library/lewansoul-lx16a-controller-board-1
- Battery Pack: https://grabcad.com/library/talentcell-rechargeable-12v-3000mah-lithium-ion-battery-pack-1
- DROK DC Converter: https://grabcad.com/library/drok-dc-converter-5-3-32v-to-1-2-32v-1
- Raspberry Pi 3A+: https://grabcad.com/library/raspberry-pi-3-4
- Motor Harness: https://grabcad.com/library/robot-skeleton-and-modular-motor-harness-1
- Thigh Link: https://grabcad.com/library/leg-piece-2
- Foot: https://grabcad.com/library/lewansoul-lx-16a-motor-connector-1
- Motor Wheels: https://grabcad.com/library/motor-shaft-adapter-for-lx-16a-1
- Spacers: https://grabcad.com/library/standoff-male-male-m1-6-1
- Thermoplastic inserts: https://www.mcmaster.com/94180A307/
- 12mm Screws: https://www.mcmaster.com/91292A834/
- 8mm Screws: https://www.mcmaster.com/91292a832
- 6mm Screws: https://www.mcmaster.com/99461A921/
- 4mm Screws: https://www.mcmaster.com/99461A918/
- Battery Holder: https://grabcad.com/library/talentcell-battery-holder-24v-lithium-ion-battery-pb240a1-1
- Minion: https://grabcad.com/library/minion-3

Key Components/Parts

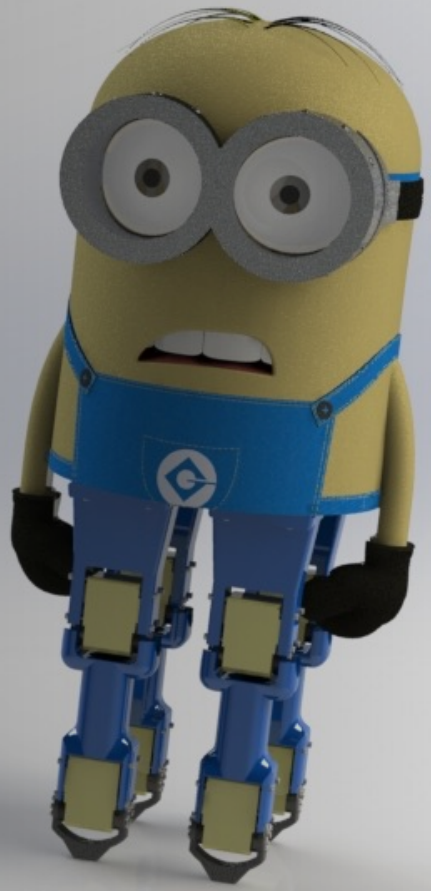
- Legs (4)
  - Hip – Thigh – Foot
- Minion – Aesthetic Design
- Electrical Components





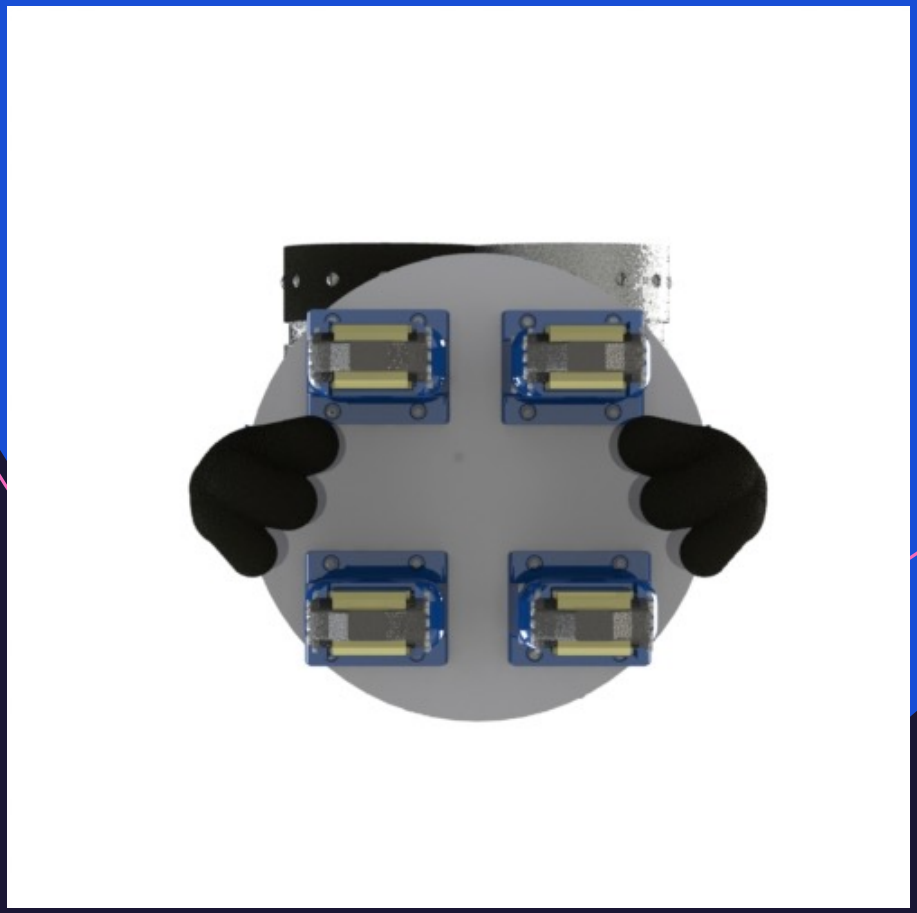


Photorealistic Rendering

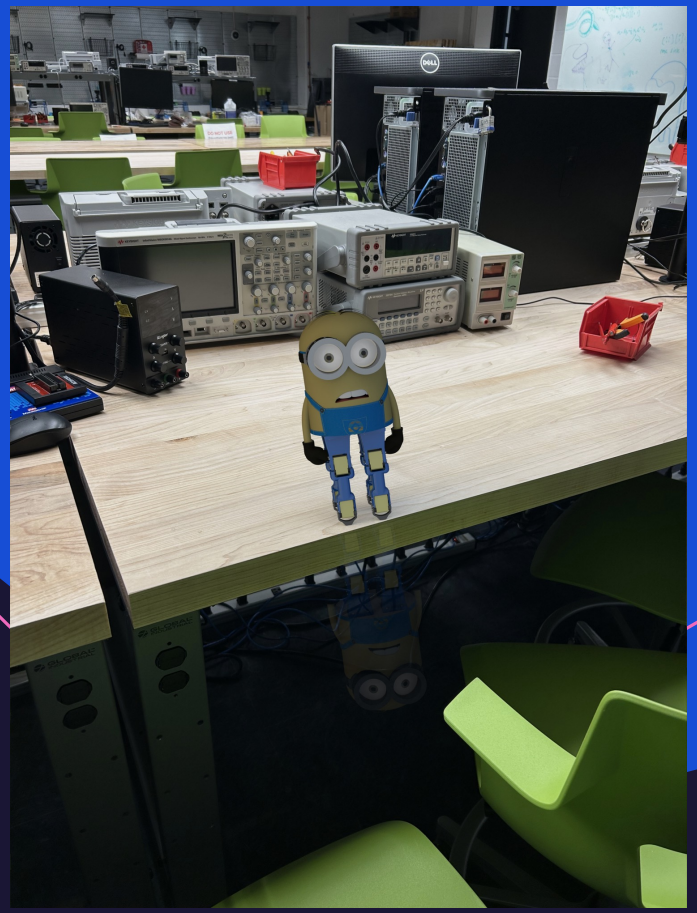


Photorealistic Rendering

Photorealistic Rendering



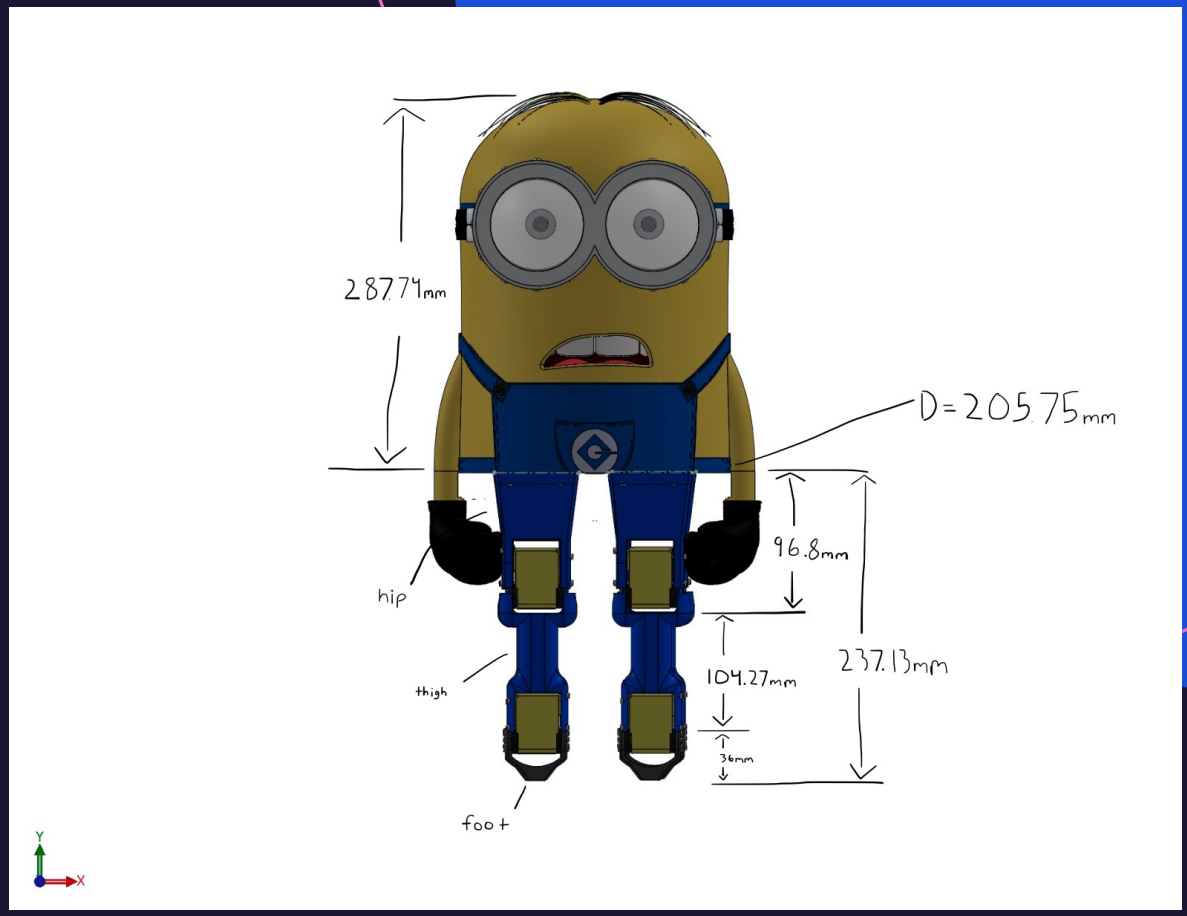
Photorealistic Rendering in Perspective



Bill of Materials (BOM)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Minion - Scaled by 0.36 uniformly - to use for final		1
2	newlegSliderHolder		4
3	Servo Motor.stp	Rhino converted to STEP	8
4	91292A834	18-8 Stainless Steel Socket Head Screw	48
5	Motor Adapter (LX-16A)		8
6	Shaft Adapter (LX-16A)		8
7	Thigh		4
8	91292A832	18-8 Stainless Steel Socket Head Screw	32
9	99461A921	Phillips Rounded Head Thread-Forming Screws	132
10	Lewansoul lx 16a servo connector		4
11	94180A307	Tapered Heat-Set Inserts for Plastic	80
12	Battery		1
13	battery holder	Rhino converted to STEP	1
14	servo controller board		1
15	Standoff M1.6 M-M H 5mm	Rhino converted to STEP	8
16	RASBERRY PI v6 v4.step		1
17	dc power converter		1

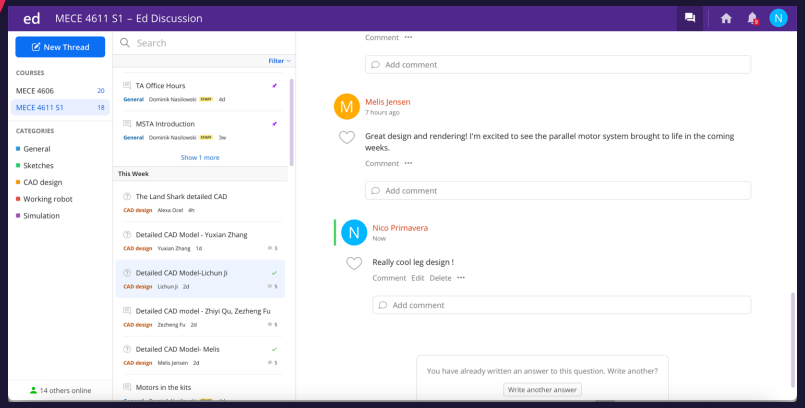
Main Dimensions

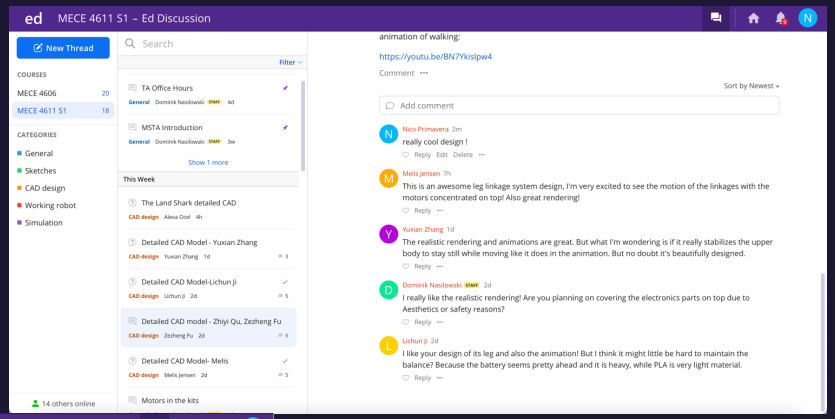


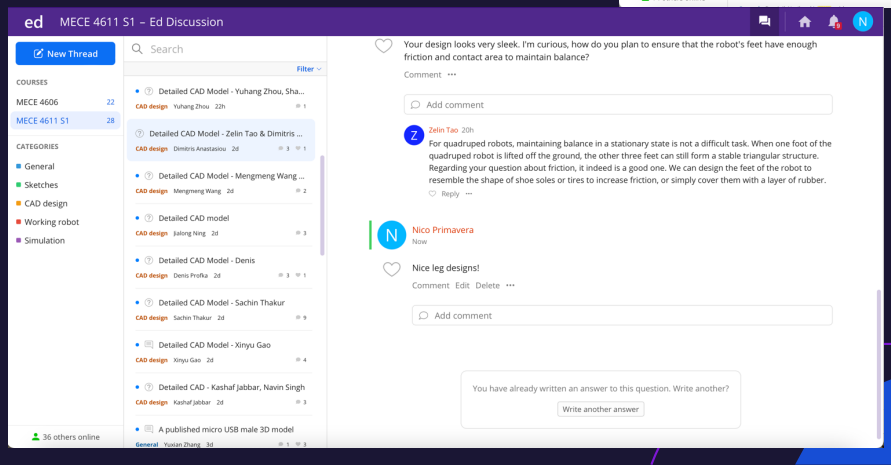
Rubric Checklist

1. 5 Points Title slide complete (Slide 25)
2. 5 Points overall aesthetics, layout and formatting of the slides (All Slides)
3. 10 Points posting some rendering of your robot on the discussion board at least 24h in advance of deadline, and commenting constructively and positively on at least three other's postings (show screenshots) (Slides 35 - 36)
4. 10 Points 3D Renderings in perspective (Slide 31)
5. 10 Points all key components included and labeled (Slide 27, 33)
6. 10 Points organic shape (no straight edges) (Slide 29)
7. 10 Points photorealistic rendering (Slide 25, 28, 29, 30)
8. 10 Points animation
9. 10 Points exploded view
10. 10 Points key specs listed including speed, weight
11. 10 Points multiple poses shown (Slide 29)
12. 10 Points detail close-up shown (Slide 27)
13. 10 Points side views with main dimensions (Slide 33)
14. 10 Points Bill of materials (Slide 32)

Comment (constructively) on at least three other's postings







Nico Primavera
Now in **CAD design**

STAR WATCHING 1 VIEW

Hi all,

Attatched is my detailed CAD. Please let me know if you have any comments or reccomendations!

ED Discussion Board post