



## 6-Axis Robotic Arm



Event Horizon Research

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### Summary

I designed and built this 6-Axis Robotic Arm from the ground up. PDF assembly manual included.

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Tags: [robot](#) [arduino](#) [robotics](#) [adafruit](#) [robotarm](#)

I believe that robotics has not permeated every day life because of the large costs generally associated with it, so I wanted to design 6-Axis Robotic Arm from the ground up. I wanted it to use 3D printing as much as possible. Everything except mounting hardware, electronics, and motors is 3D printed. I've designed only one robotic arm before, and learned a lot of lessons that this new one takes into account. This arm is much more robust and capable, and includes the ability to be controlled wirelessly through radio communication. I have included an assembly manual, again a first for me, so I hope that helps anyone interested. I have also attached the text files of the code I use to control the robot. It is a modified version of the RFM69 example code. Make sure to add the necessary libraries, and wire the components in accordance with the code if you want to use it directly. If you have any questions, feel free to reach out and I will help you with what I can.





A couple notes: I have not included an end effector since everyone's requirements are different. I encourage everyone to design their own.

I also have not included the controller. It didn't turn out as well as I had hoped (aesthetically), so I have decided to skip on including it.




I hope you enjoy this project!

A video to it running is on Reddit here: [https://www.reddit.com/r/3Dprinting/comments/1azw67y/3d\\_printed\\_6axis\\_robot/?utm\\_source=share&utm\\_medium=web2x&context=3](https://www.reddit.com/r/3Dprinting/comments/1azw67y/3d_printed_6axis_robot/?utm_source=share&utm_medium=web2x&context=3)

## Model files

 <b>Bicep_Tricep</b>		3 files
	<b>biceptricep.stl</b>	
	<b>halfbiceptricep.stl</b>	
	<b>longercoupler.stl</b>	

 <b>Forearm</b>		4 files
	<b>wristmount.stl</b>	
	<b>forearm.stl</b>	



**handmount.stl**



**handmountshaft.stl**



**Gears**

16 files



**planetv2\_1.stl**



**planetv2\_3.stl**



**shouldergearstage2.stl**



**shouldergearv2limiter.stl**



**spacer.stl**



**shouldergearv2sun2.stl**



**shouldergearv2.stl**

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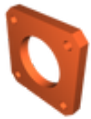
**planetv2\_2.stl**

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**elbowgearv2limiter.stl**

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**spacer.stl**

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**elbowplanet3.stl**

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**elbowplanet1.stl**

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**elbowplanet2.stl**

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**elbowmount.stl**

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**elbowsun.stl**

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**elbowstage2.stl**



## Base

8 files



**bearing-housing.stl**



**base.stl**



**basemotormount.stl**



**basefoot.stl**



**basespacer.stl**



**tpufoot.stl**



**basepinion.stl**

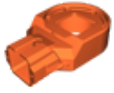


**base\_flange.stl**



## Elbow

2 files



**elbow.stl**



**stepper-cap.stl**

## Other files

**robotic-arm-instruction-manual.pdf**

**controllercode.txt**

**robotbraincode.txt**

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