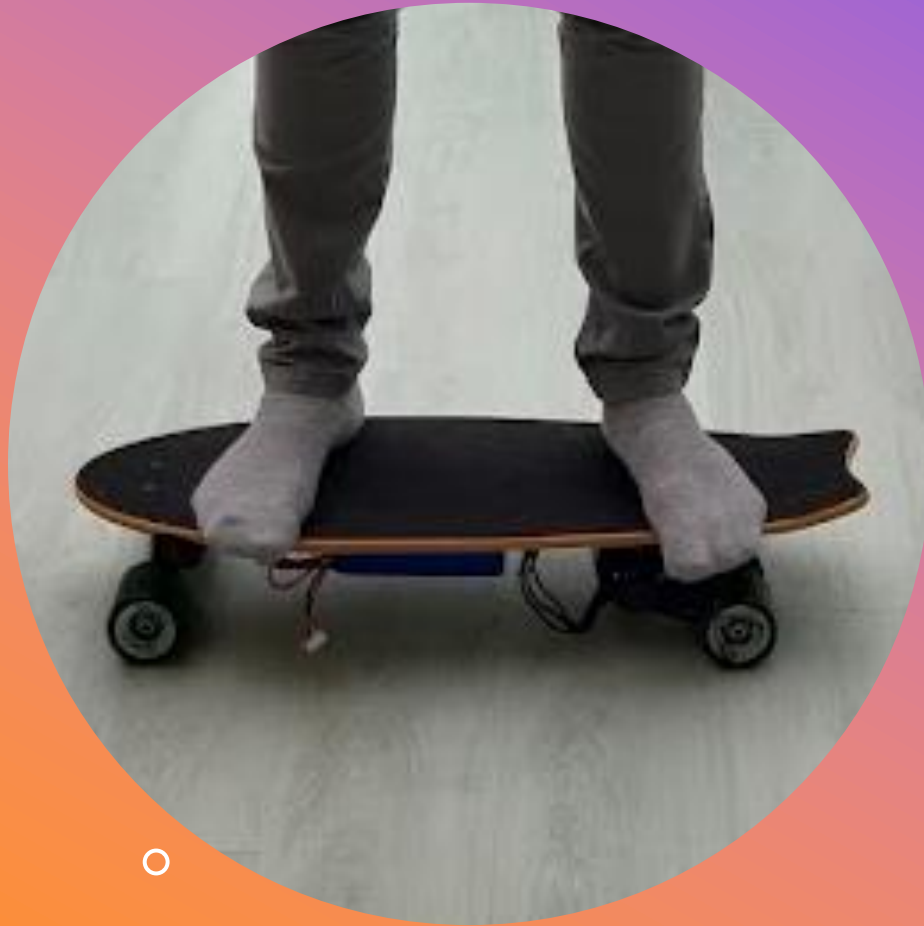


ELECTRIC SKATEBOARD



William Otty



AGENDA

Introduction

Research

The Plan

3D Printing

Assembly

Drive Test

Reflection

Introduction

- Watching YouTube videos
- Experience with electronics
- Cool project to work on



RESEARCH





Summary

- Many people had attempted.
- Wealth of resources available.
- VESC project
- Parts List

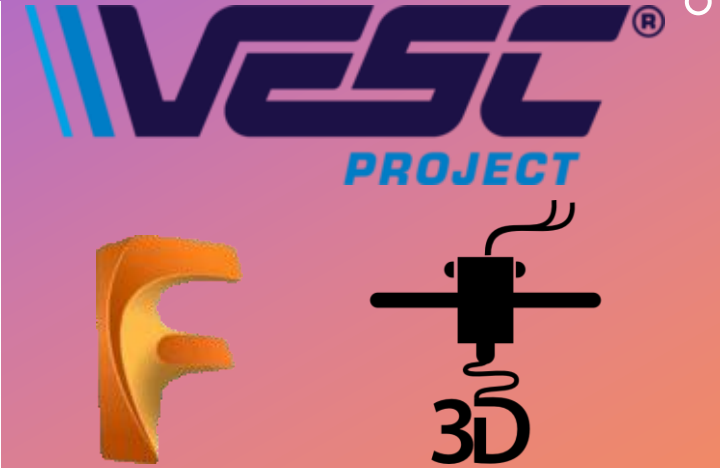
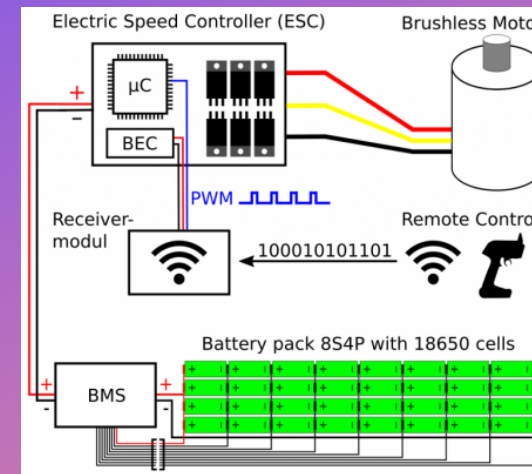




THE PLAN



PARTS LIST AND ELECTRONICS DIAGRAM



ESB : Buy List

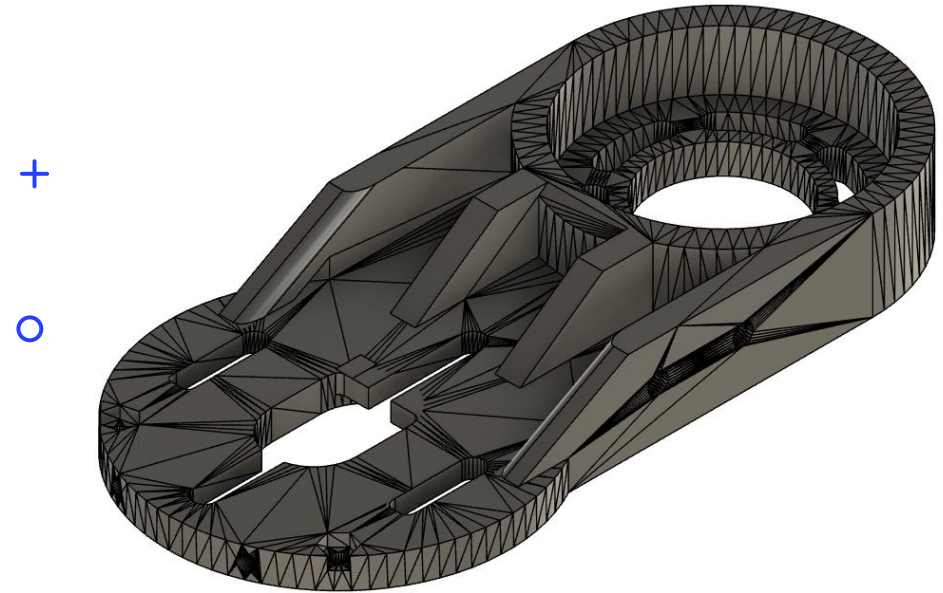
Parts List			Total Price		
Motor	Motor	270kv 88A 3200W 85% Motor	£59.99	https://saite-motor.en.alibaba.com	3500~8000g of thrust
Battery	Electronics	22.2V 5.5mm Connector	£39.74	https://hobbyking.com/en_us/turnigy-5000mah-6s-40c-lipo-pack.html	
Drive Belt	Motor	265mm HTD5 9mm Belt	£3.49	http://uk.rs-online.com/web/p/timing-belts/4746435/	
3D Printed	Motor	For casing of (Battery, ESC, Gears, Motor Hz	Free @ College	http://www.thingiverse.com/thing:1753981/#files	
M4 Bolts	Electronics	For support of 3D Printed Parts		http://amzn.eu/6E0p4VK	
Cruiser	Board	Quest 27"	£39.99	http://amzn.eu/0qBs3vA	
Bearings?	Board	ABEC 11		http://amzn.eu/3PGmd6F	
Trucks?	Board	150mm/180mm			
Wheels?	Board				
ESC	Electronics		£43.86	https://www.alibaba.com/product-	
2 x XT60 Battery	Electronics	2 x 5s batteries in series creating 10s 60v			
Total			£187.07		
		= Not required			
		= Unsure if required			
		= Bought			

3D PRINTING



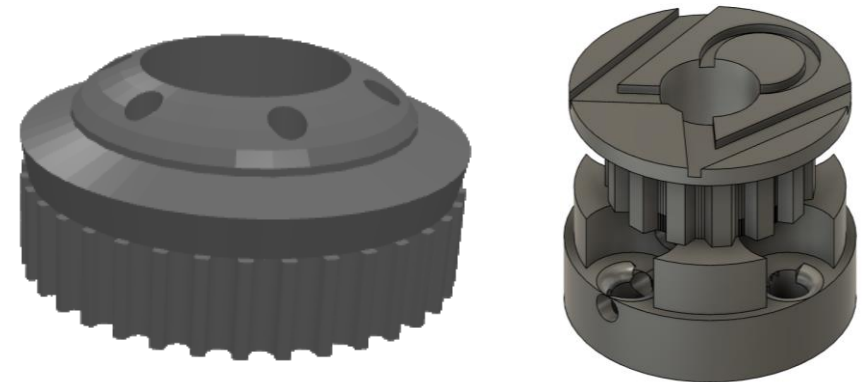
GEARS AND MOTOR MOUNT

- I designed the 3D-printed parts
- Decided to use a caliper and a motor mount. Separating these two parts means I can get a good grip.
- Four brackets to keep it stiff.
- I designed two gears

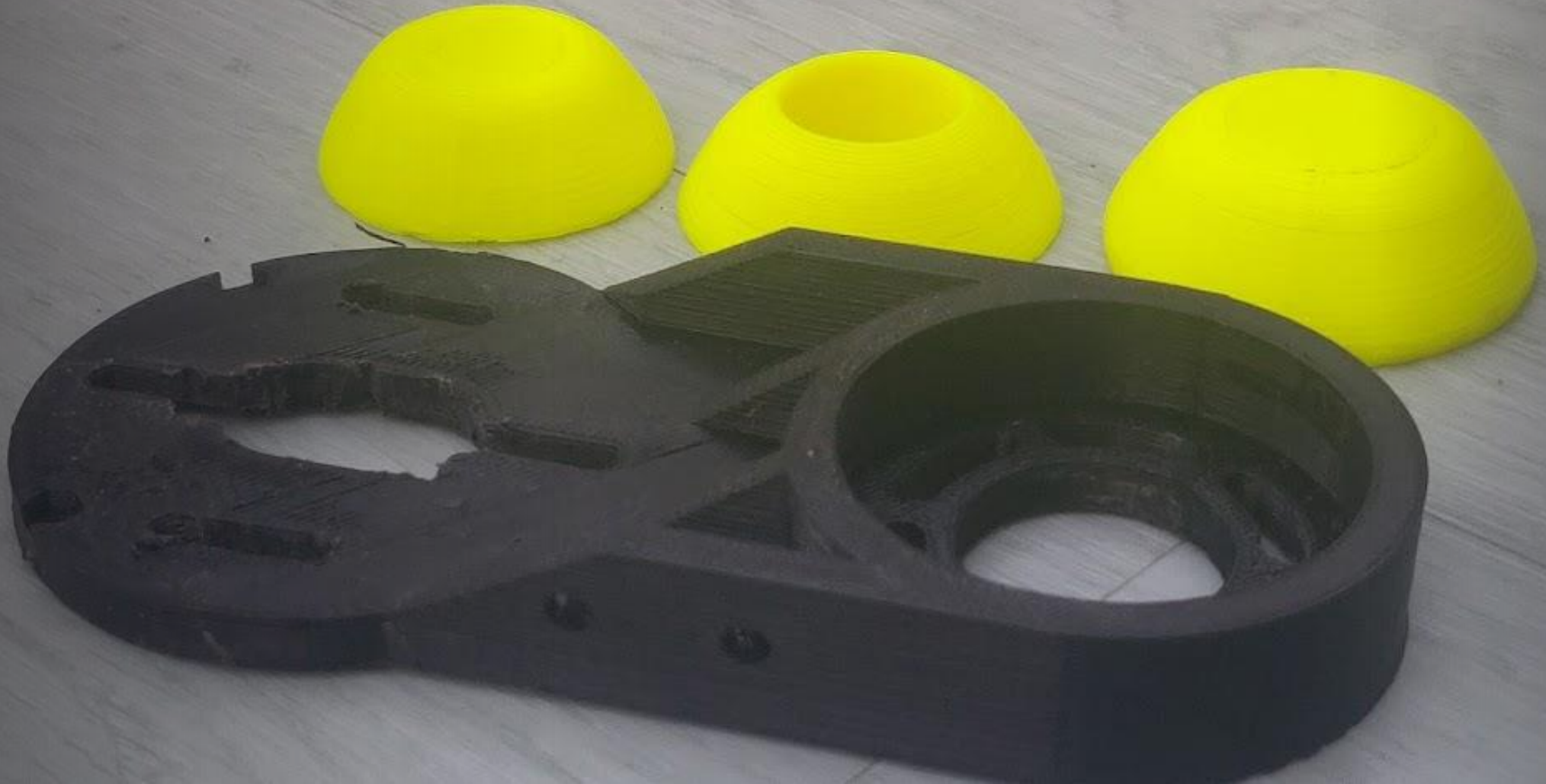


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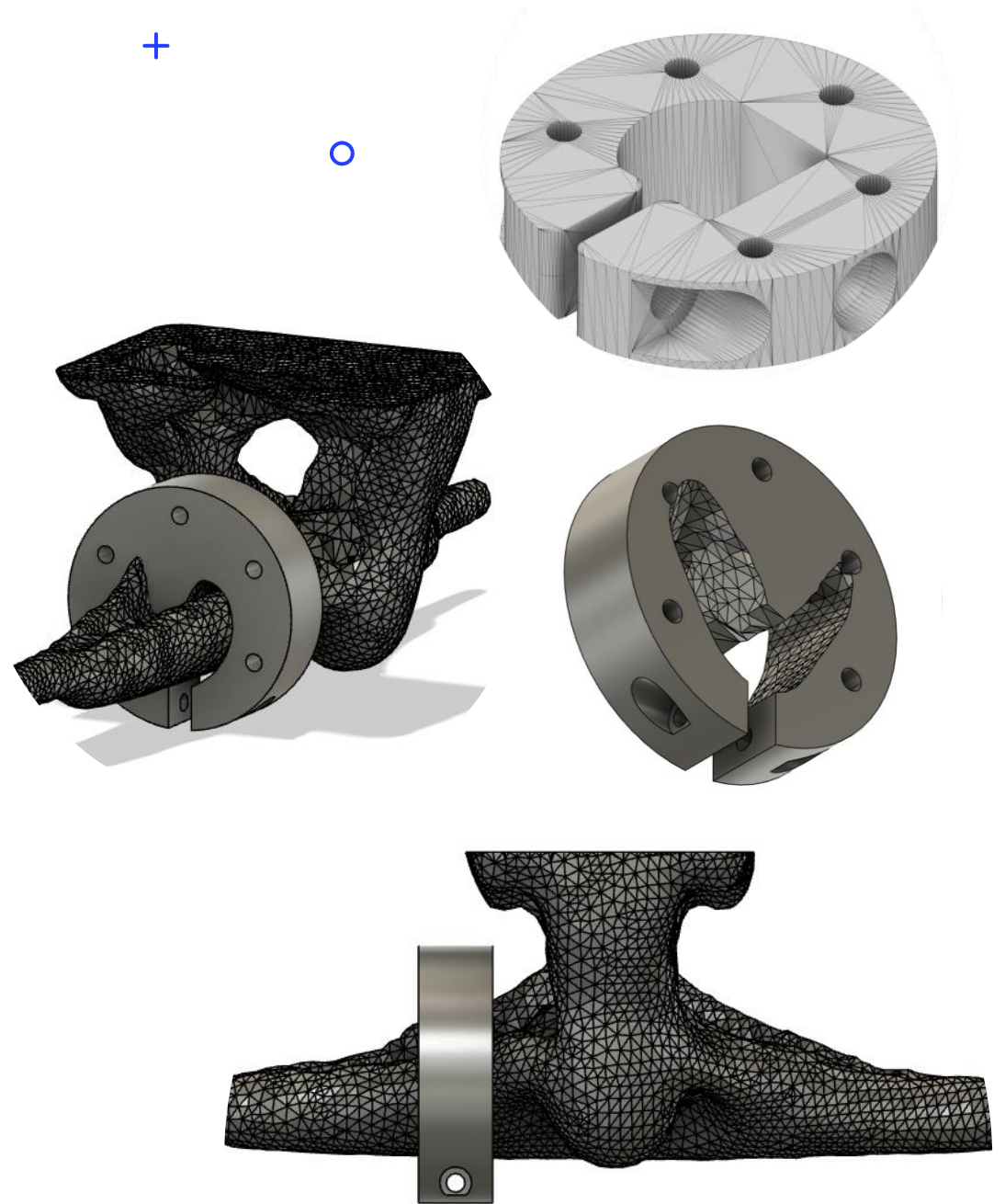


PROTOTYPING



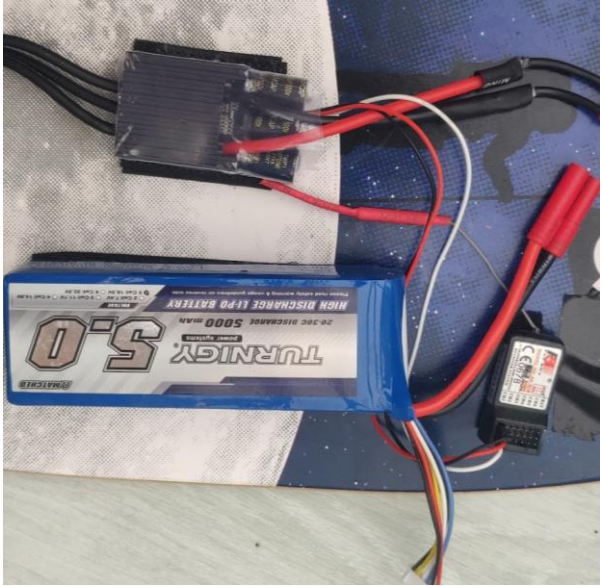
THE CALIPER

- Used an iPhone camera and Lidar sensor to get a 3d model of the skateboard trucks.
- I then made a Boolean operation to cut the caliper to exactly the right size for the trucks.
- Then using a 3D printer I printed the 4 parts and began constructing them



ASSEMBLY







Assembly

- Velcro to attach parts
- Antenna taped down
- Low profile so no case

DRIVE TEST





REFLECTION





REFLECTION

- The project was an overall success
- Milling the motor mount
- Compact controller
- Higher Power

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THANK YOU

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