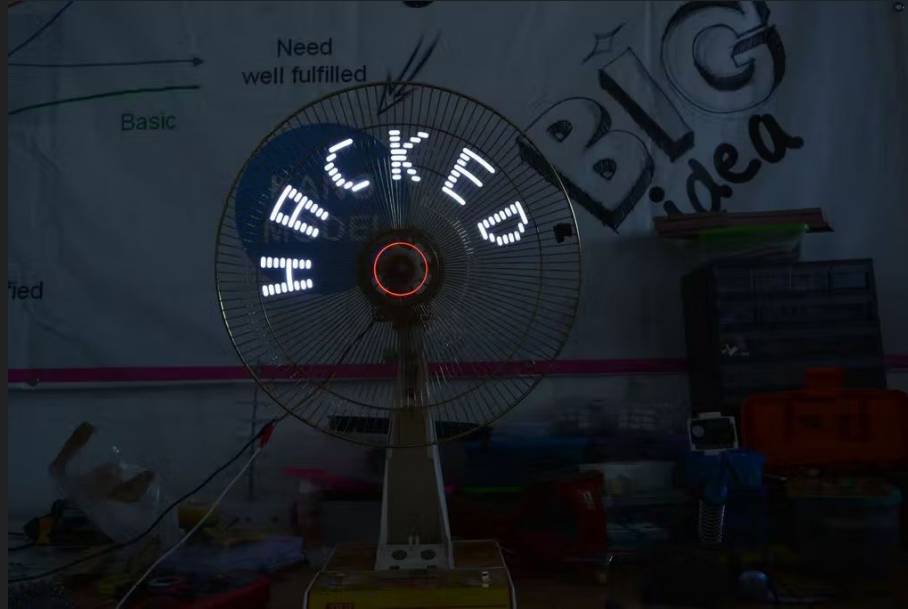


# Persistence of Vision (POV) Fan

Raymond Blair Jr  
Hayvin Bolton  
Ben Kepner

# Need

Supplying power and 2D images to a rotating system to create an eye catching visual display out of LEDs that can be controlled wirelessly



# Approach

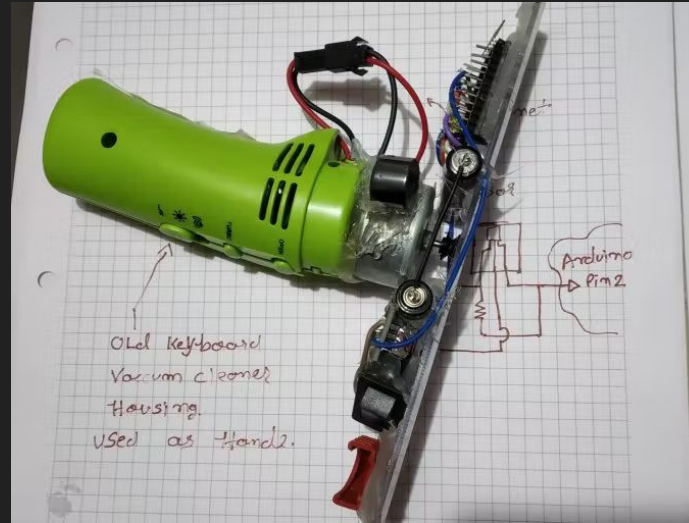
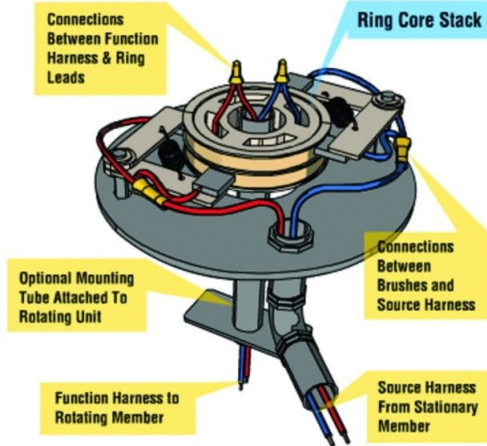
## Persistence Of Vision Fan

- Consists of a primary PCB carrying the microcontroller and LEDs
- A 3D printed mount with a motor
- Wireless charging coils for power to the PCB
- A remote for wireless control.
- Images are stored on the microcontroller in the PCB

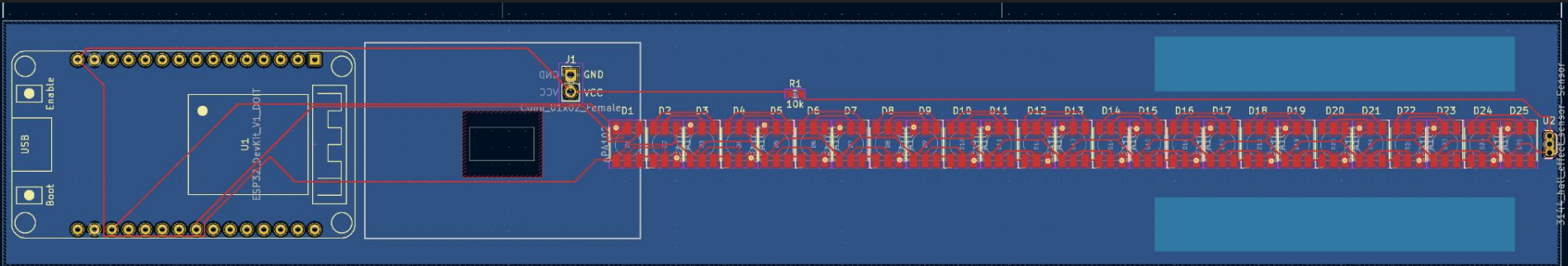
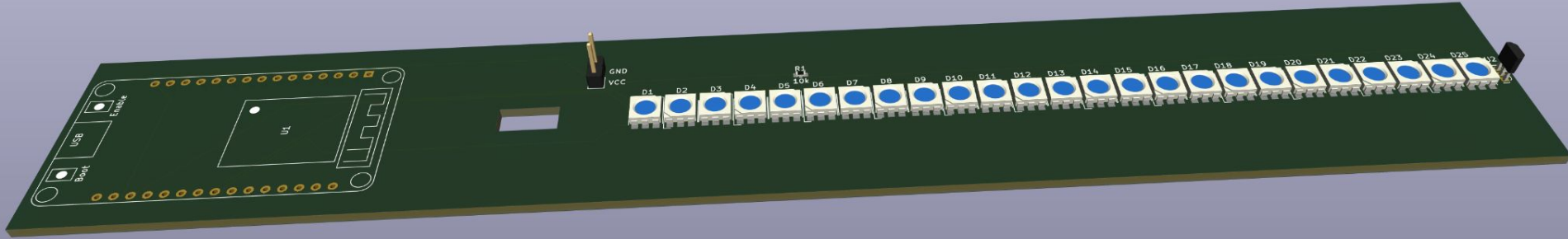
# Competition / Benefits

- Wirelessly charged PCB fan blade
- Balanced in 1D space only
- Remote Controlled

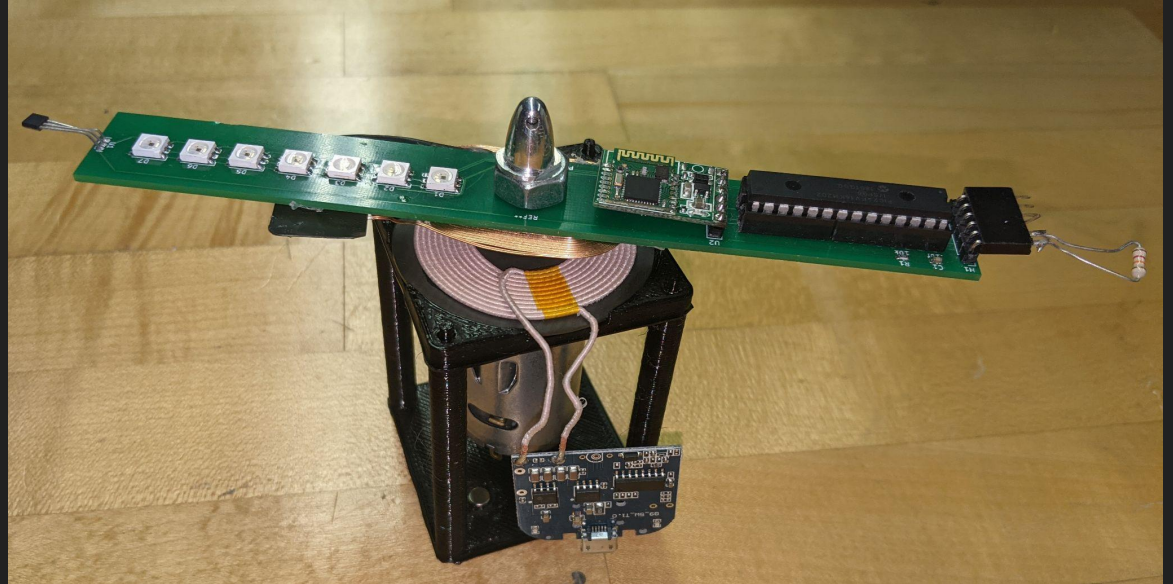
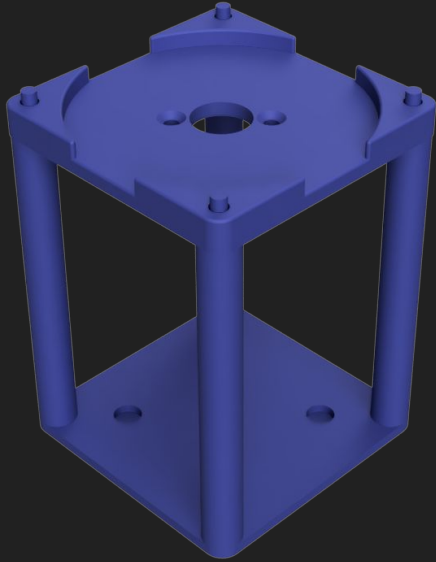
## How a Slip Ring Works



# PCB Design

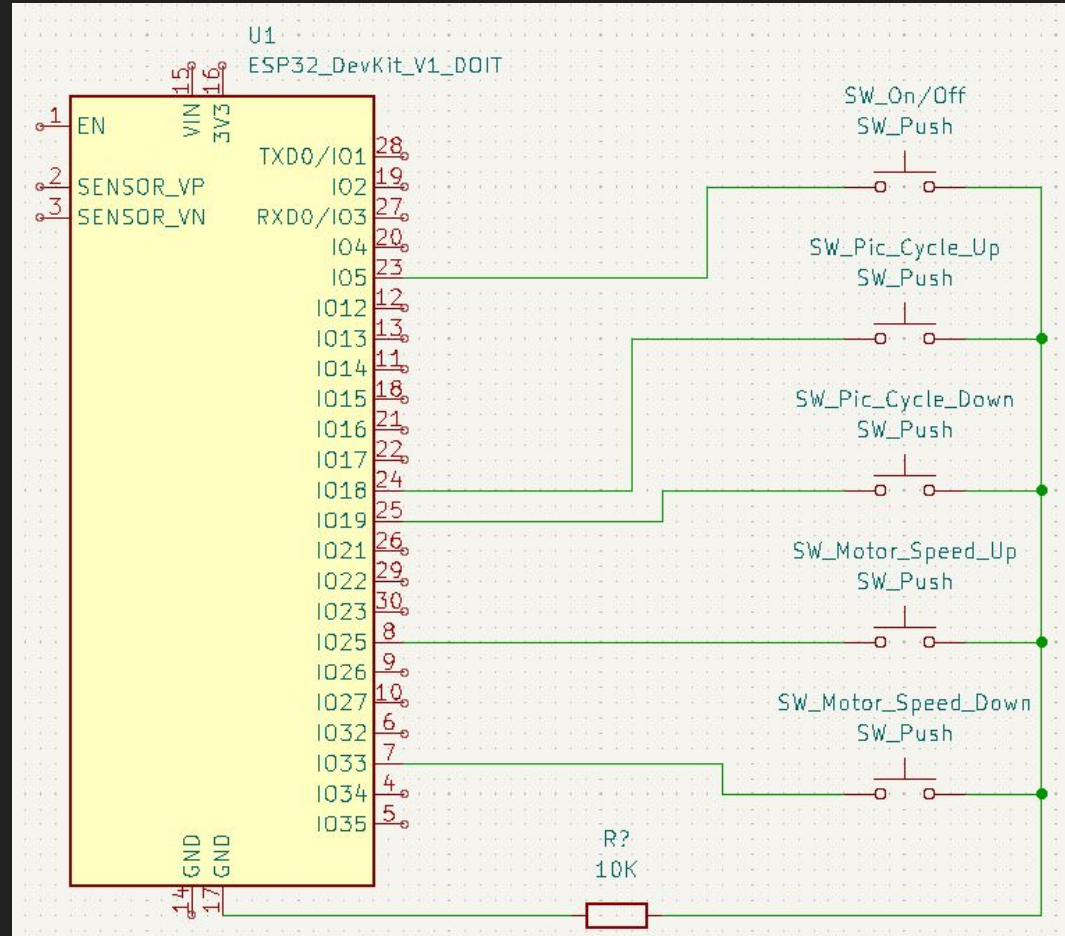
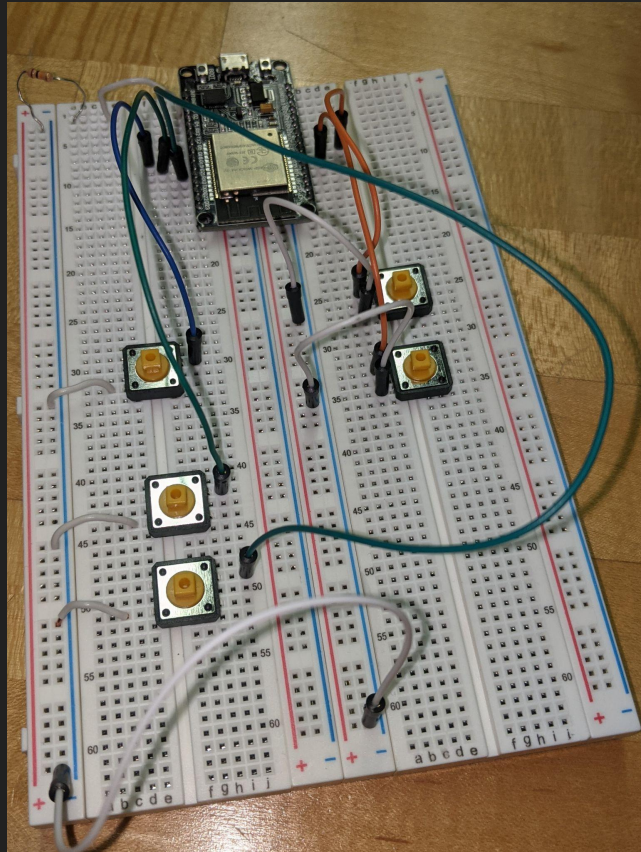


# Motor Mount





# Remote



# Cost Analysis

Quantity	Item	(hyper-linked)	Unit Price	Total Price
1	esp32 dev board (3-pack)	<a href="https://www.amazon.com/Teyleten-Rol">https://www.amazon.com/Teyleten-Rol</a>	\$21.88	\$21.88
1	motor	<a href="https://www.amazon.com/AUTOTOOL">https://www.amazon.com/AUTOTOOL</a>	\$6.89	\$6.89
1	motor controller	<a href="https://www.andymark.com/products/s">https://www.andymark.com/products/s</a>	\$30.00	\$30.00
1	Perf PCB	<a href="https://www.amazon.com/ELEGOO-Pr">https://www.amazon.com/ELEGOO-Pr</a>	\$11.99	\$11.99
1	LEDs (100 Pack)	<a href="https://www.ledlightinghut.com/sk9822">https://www.ledlightinghut.com/sk9822</a>	\$16.60	\$16.60
1	buttons	<a href="https://www.amazon.com/Gikfun-12x1">https://www.amazon.com/Gikfun-12x1</a>	\$7.68	\$7.68
5	PCB	<a href="https://www.pcbway.com/">https://www.pcbway.com/</a>	\$4.85	\$24.25
1	Soder Paste Stensil	<a href="https://www.pcbway.com/">https://www.pcbway.com/</a>	\$10.00	\$10.00
1	battery	<a href="https://www.amazon.com/gp/product/B">https://www.amazon.com/gp/product/B</a>	\$26.95	\$26.95
1	micro usb cables	<a href="https://www.amazon.com/gp/product/B">https://www.amazon.com/gp/product/B</a>	\$7.99	\$7.99
1	wireless charger transmitter	<a href="https://www.amazon.com/gp/product/B">https://www.amazon.com/gp/product/B</a>	\$8.68	\$8.68
1	wireless charger receiver	<a href="https://www.amazon.com/gp/product/B">https://www.amazon.com/gp/product/B</a>	\$9.19	\$9.19
1	neodiniuim magnets	<a href="https://www.amazon.com/Magnets-Re">https://www.amazon.com/Magnets-Re</a>	\$7.99	\$7.99
1	motor mount	<a href="https://www.amazon.com/uxcell-Airpla">https://www.amazon.com/uxcell-Airpla</a>	\$9.99	\$9.99
1	hall effect sensor	<a href="https://www.amazon.com/gp/product/B">https://www.amazon.com/gp/product/B</a>	\$7.49	\$7.49

Total : \$207.57



