

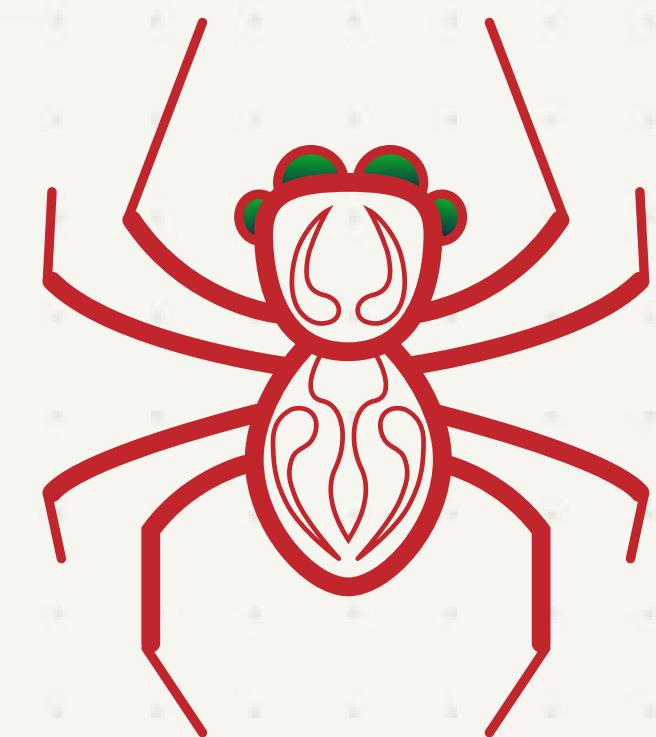


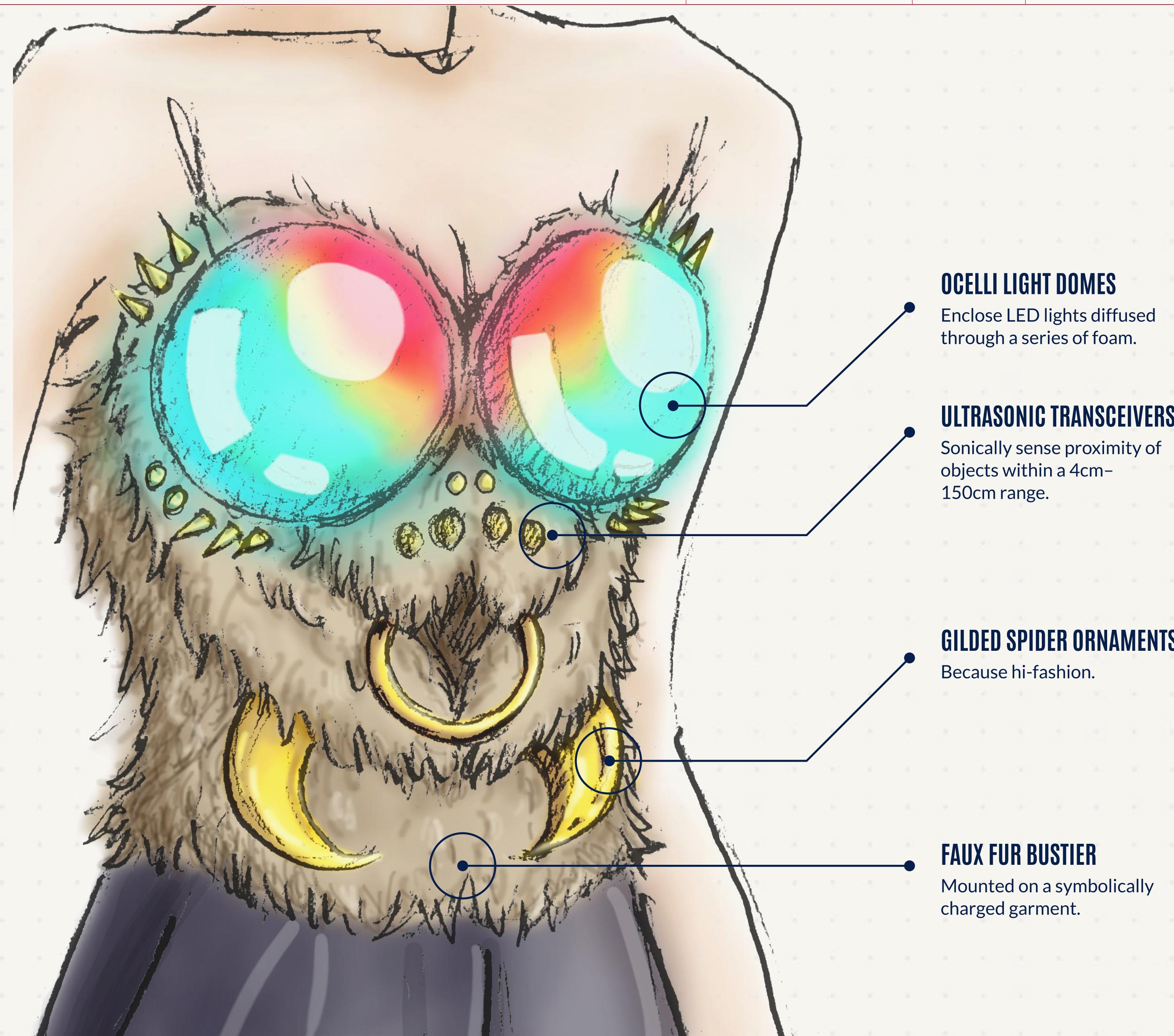
OCELLIGHT

THE PERCEPTION BUSTIER

An open-source wearable artwork spinning a web around proximity, perception, and personal space

GRANDY CARSON + DAVE ZOBEL
github.com/hotwaxlab/ocellight-perception-bustier



**OCELLI LIGHT DOMES**

Enclose LED lights diffused through a series of foam.

ULTRASONIC TRANSCIEVERS

Sonically sense proximity of objects within a 4cm-150cm range.

GILDED SPIDER ORNAMENTS

Because hi-fashion.

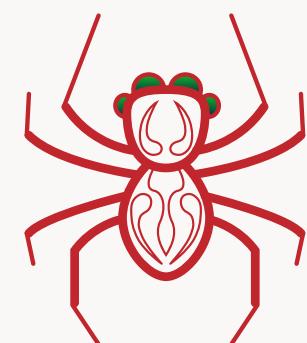
FAUX FUR BUSTIER

Mounted on a symbolically charged garment.

WE CAN EXPLAIN

TECHNOLOGY AND THE BODY

As sensing technologies increasingly shape how we move through the world, **Ocellight** asks how those tools might support awareness and agency rather than distraction or surveillance—inviting technology back into a more human, embodied role.



Jumping spider ocelli.

https://commons.wikimedia.org/wiki/File:Jumping_Spider_Eyes.jpg

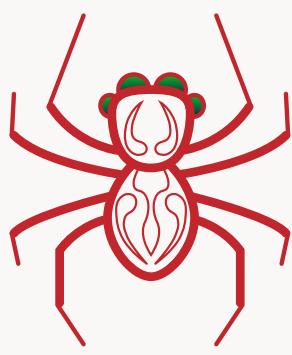
Hogna Wolf Spider ocelli.

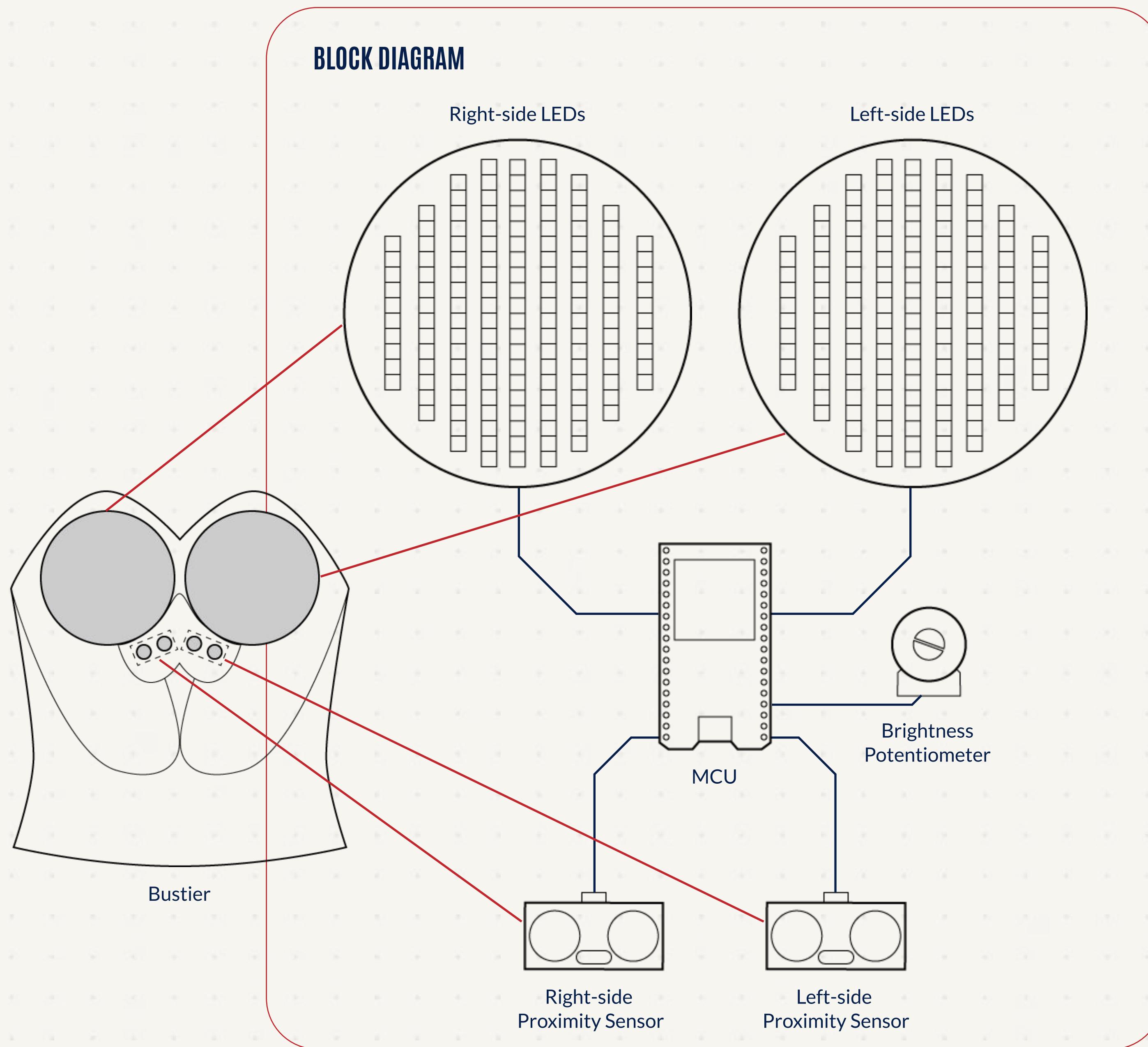
https://commons.wikimedia.org/wiki/File:Eye_Arrangement_of_a_Hogna_Wolf_Spider.png

PROXIMITY & PERCEPTION

INSPIRED BY SPIDER SIGHT

Ocelight senses nearby movement and translates it into light through two “ocelli,” inspired by spider vision. Rather than relying on a single point of view, perception is distributed, spatial, and instinctual—closer to animal awareness than machine vision.

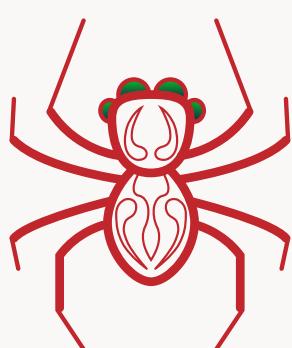


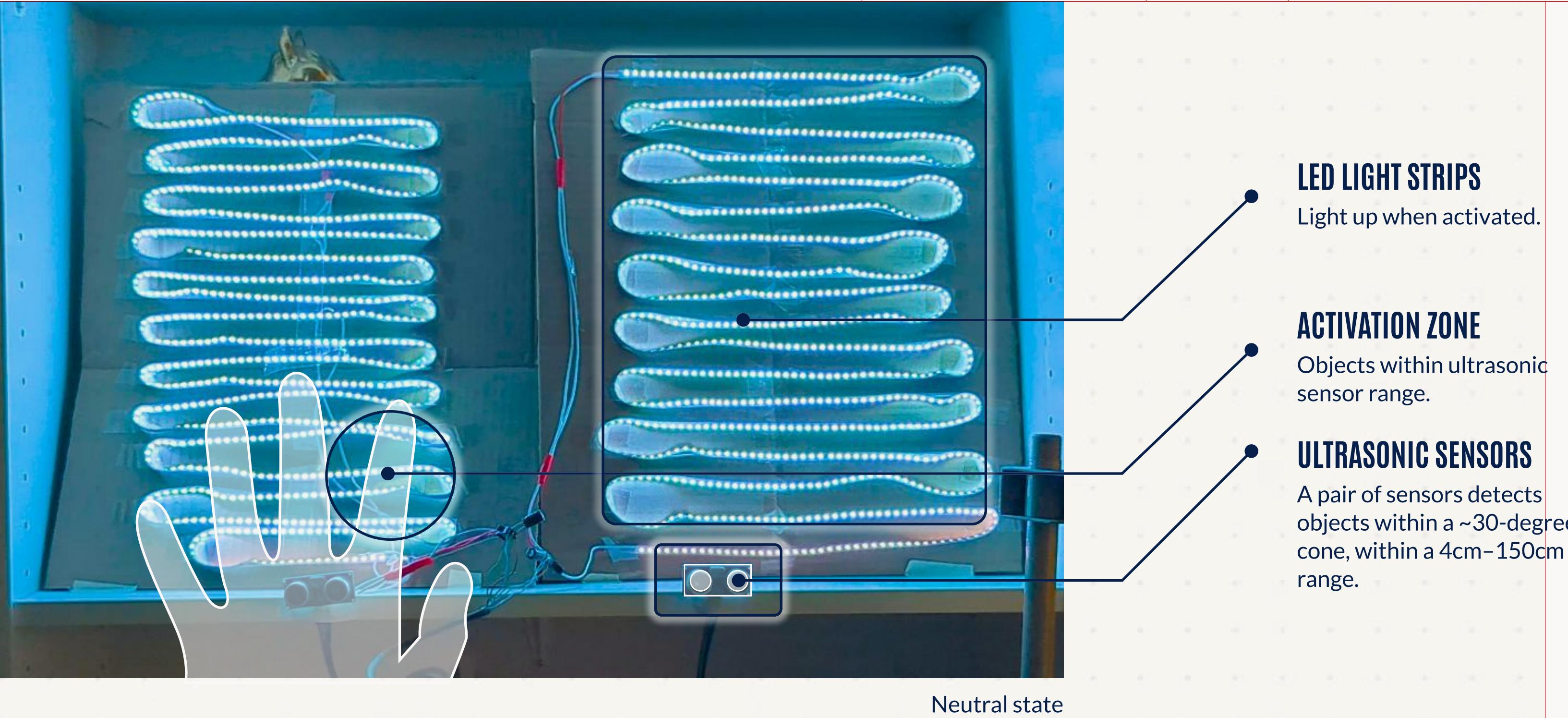


FORM & EXPERIENCE

A WEARABLE THAT RESPONDS

The piece takes the form of a sculptural bustier, worn on the chest and roughly fourteen inches across. As someone approaches, LED ocelli flare in their direction, subtly reshaping movement and making personal space visible and unambiguous.





LED LIGHT STRIPS

Light up when activated.

ACTIVATION ZONE

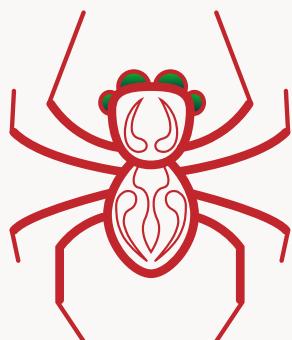
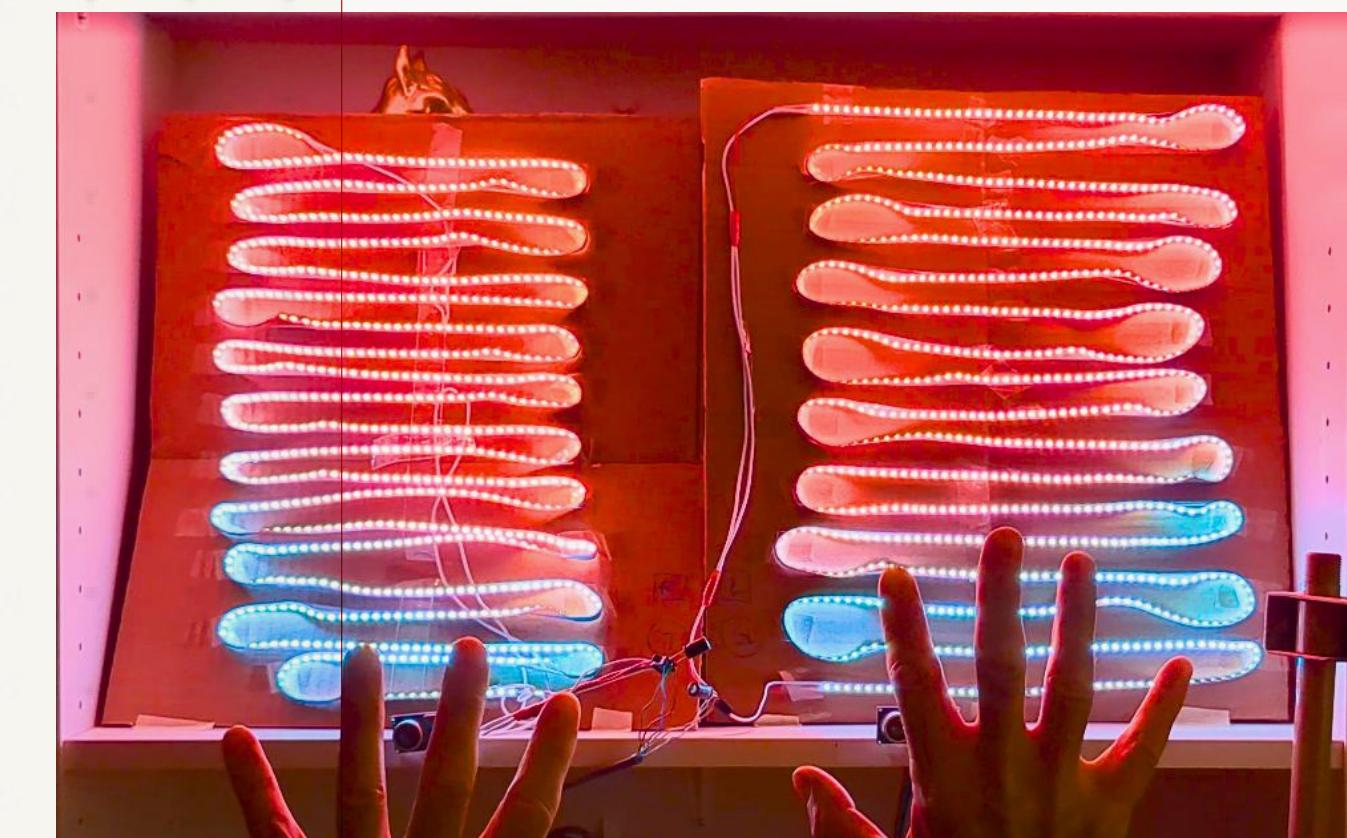
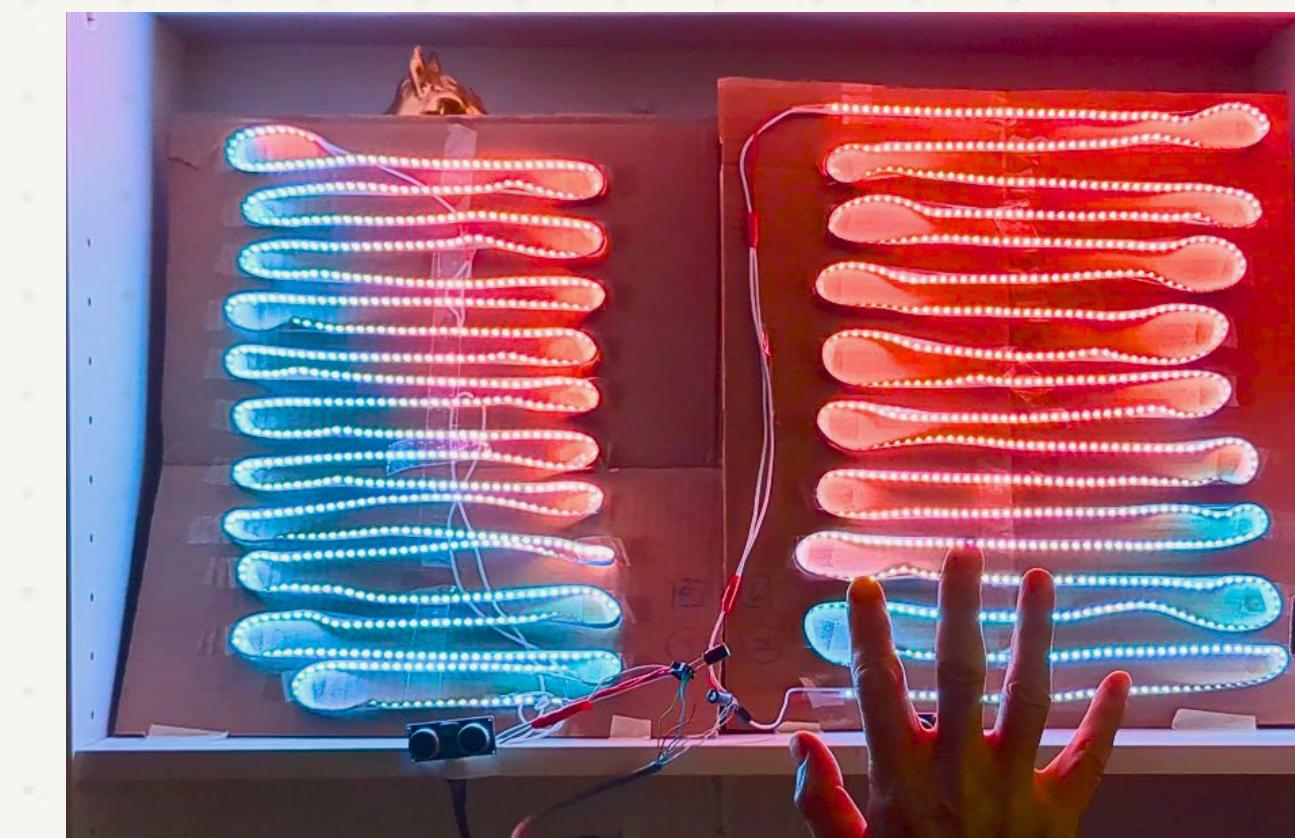
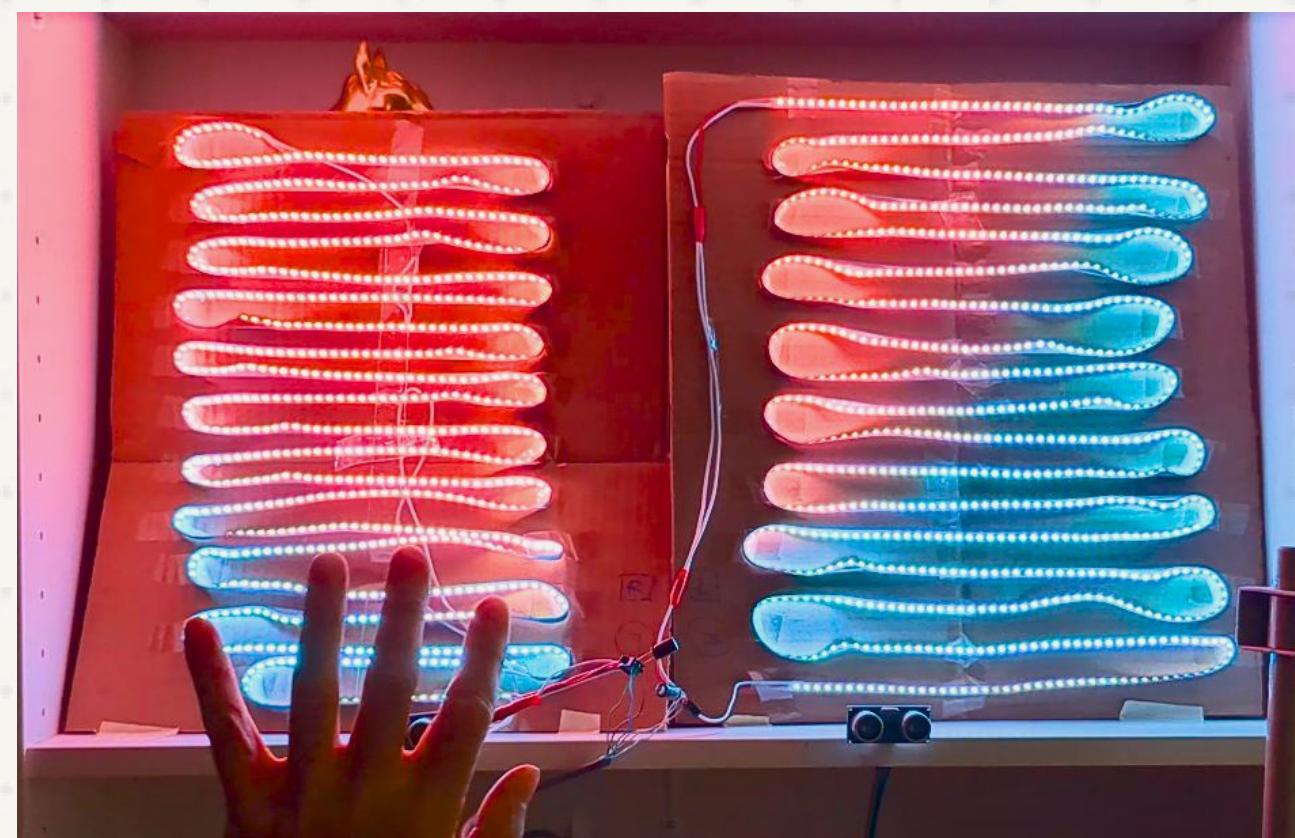
Objects within ultrasonic sensor range.

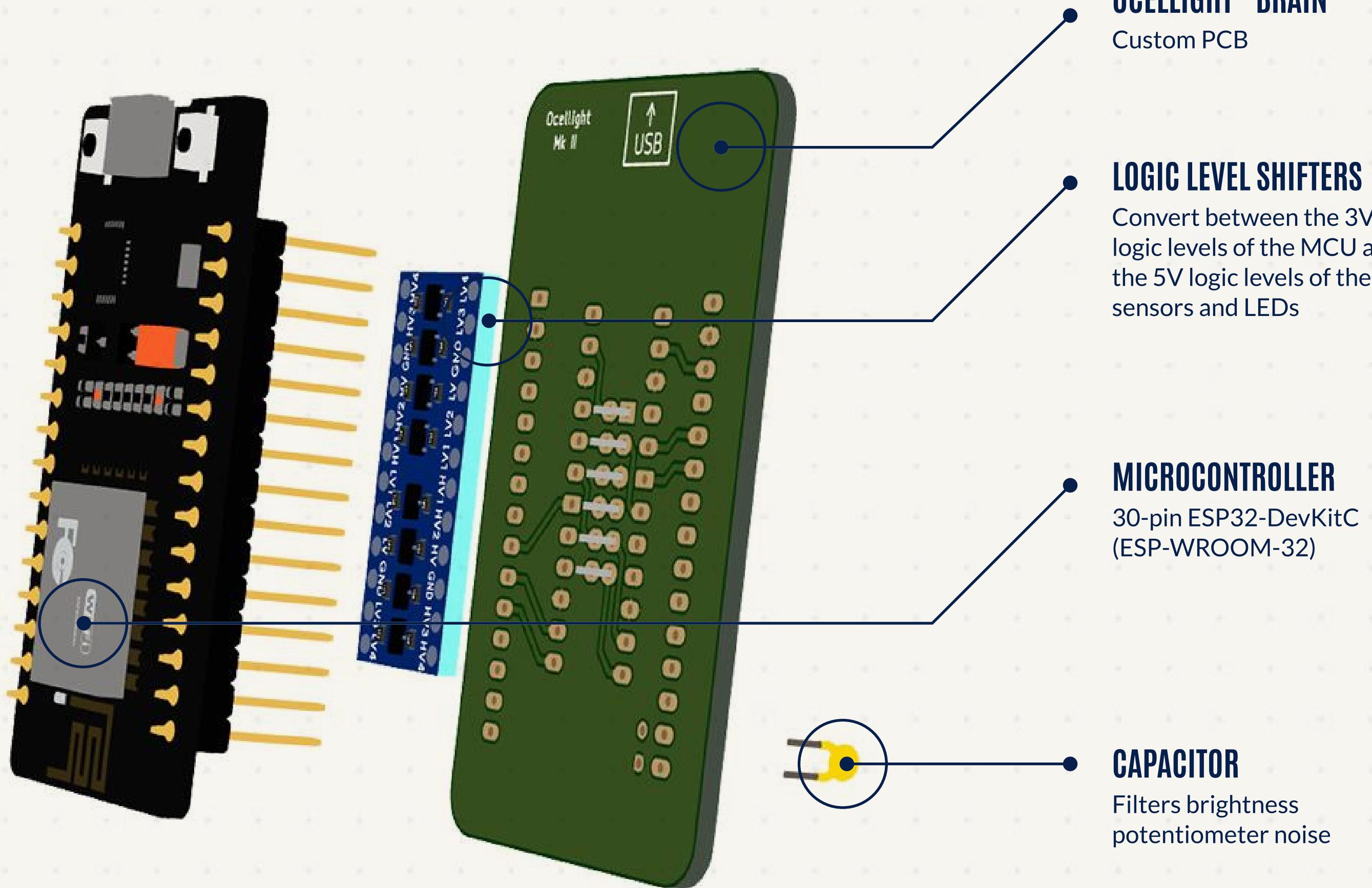
ULTRASONIC SENSORS

A pair of sensors detects objects within a ~30-degree cone, within a 4cm–150cm range.

PROTOTYPE & TESTING

PROTOTYPE FUNCTIONALITY TESTING





OCELLIGHT "BRAIN"

Custom PCB

LOGIC LEVEL SHIFTERS

Convert between the 3V3 logic levels of the MCU and the 5V logic levels of the sensors and LEDs

MICROCONTROLLER

30-pin ESP32-DevKitC (ESP-WROOM-32)

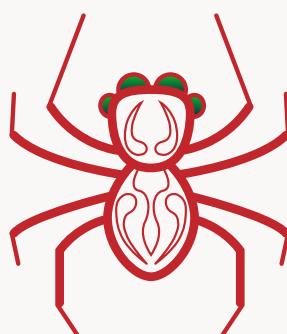
CAPACITOR

Filters brightness potentiometer noise

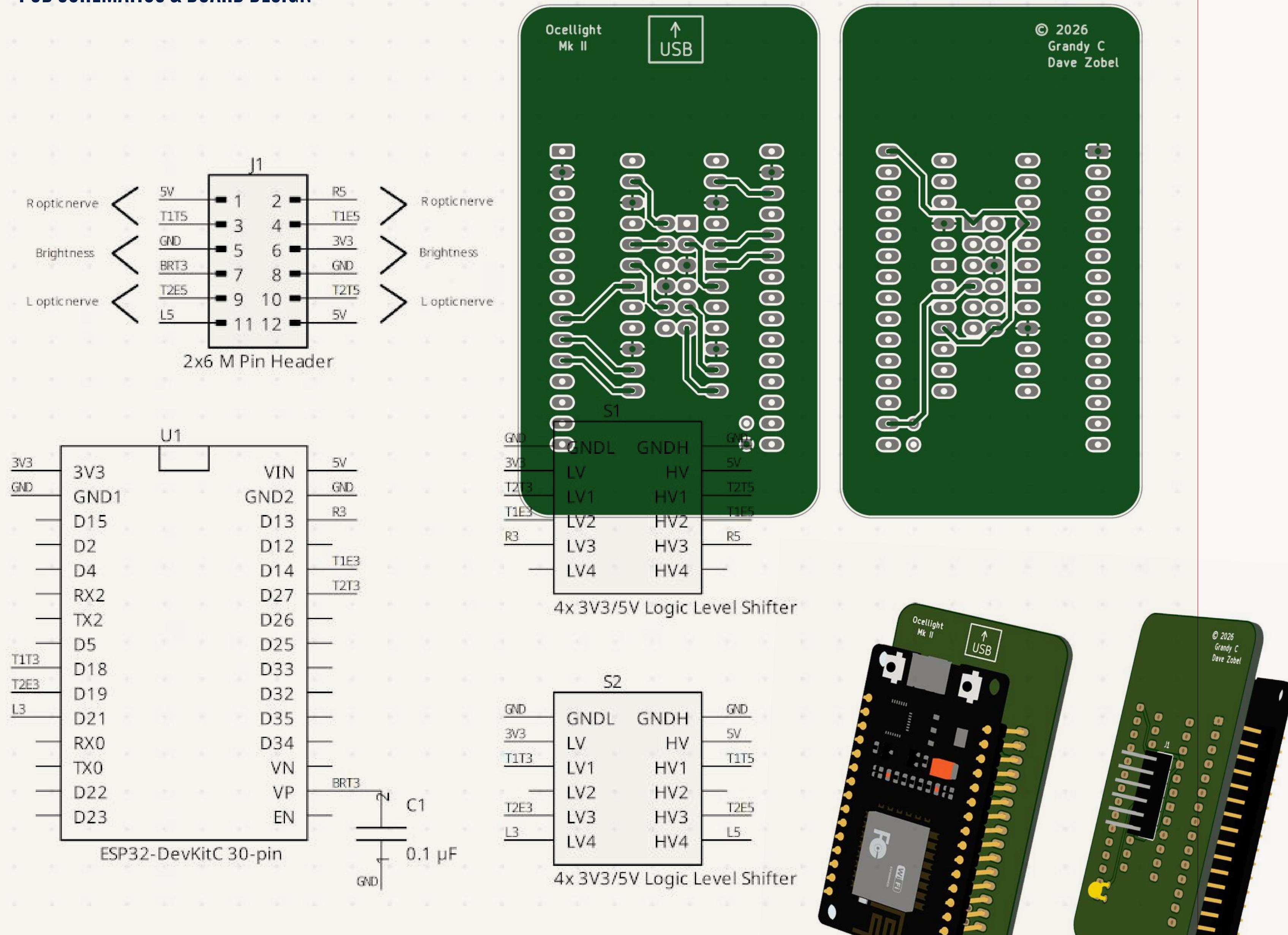
THE HARDWARE

CUSTOM AND OPEN SOURCE

A custom PCB (the “brain”) acts as a hub for proximity sensors, a microcontroller, and LED outputs. Designed for low power use and wearability, the system is modular and expandable, and can be adapted for more sensors, as well as different kinds of sensors.



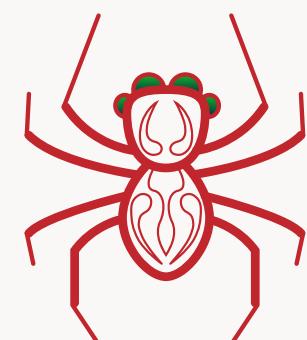
PCB SCHEMATICS & BOARD DESIGN



OPEN BY DESIGN BUILT FOR LEARNING

This project was made possible by the Designer Development Award from World of WearableArt in New Zealand. The purpose of this award is to prioritize learning and sharing.

All schematics, PCB files, firmware architecture, and documentation are published openly. **Ocellight** is intended as a learning resource and a starting point—something others can study, adapt, or reinterpret.



PROJECT STATUS & ACCESS

DOCUMENTATION & DEVELOPMENT ACTIVELY IN PROGRESS

The project currently includes a completed PCB design, schematics, renders, sketches, and work-in-progress builds. A fully assembled wearable prototype is in fabrication and testing, scheduled for completion by March 2026.

Ocellight lives as an evolving open-source project where hardware, craft, and cultural questions intersect.

For source files and updates, see:
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