

EYESHIFT

BUILDING THE BEST EYE CARE & POSTURE-CONTROL DEVICE FOR YOUR GLASSES

*“It started with blurry vision, then came the headaches, then the fatigue —
and I didn’t even know I was doing it to myself.”
— a college freshman with high myopia*

THE RISE OF DIGITAL STRAIN & POSTURE DAMAGE

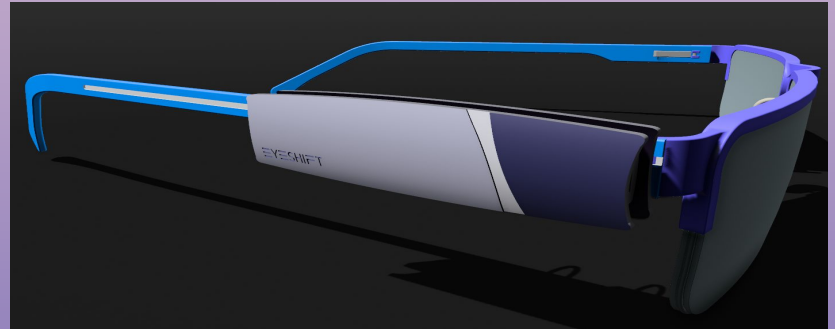
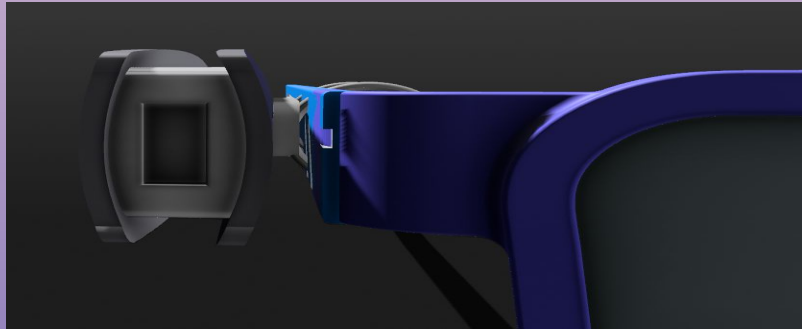
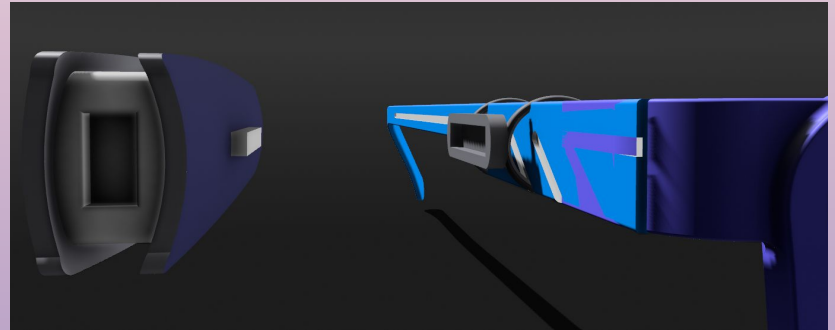
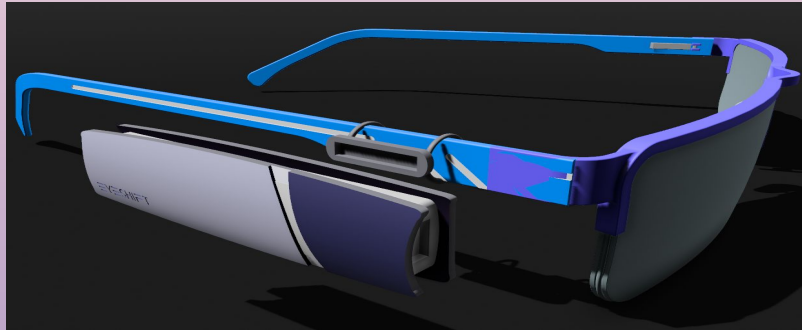
50% of the world will be myopic by 2050

Every additional hour of
screen time increases myopia risk by **21%**

64% of global population currently uses
glasses or vision correction

HOW EYESHIFT IS CHANGING THE GAME

This novel design will provide real-time haptic feedback on EyeCare & Posture Control. Through the use of a small and portable device that can be attached to your existing glasses at the temples of your frame using a snap on attachment.



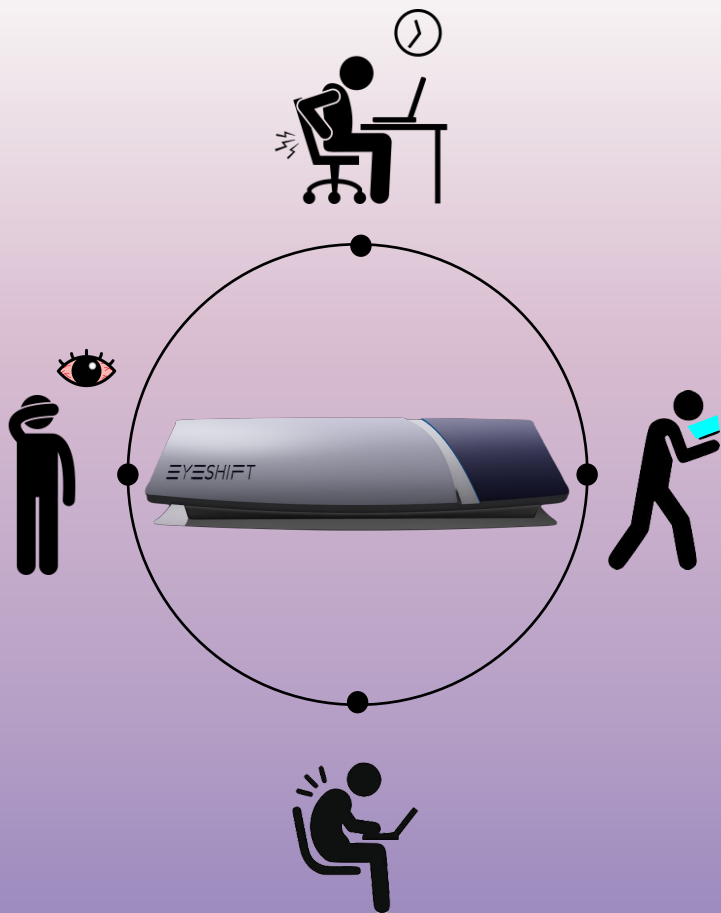
What Makes EyeShift a Game-Changer

- Continuously tracks Neck Posture, Eye-to-Viewing Object Distance, and Ambient Lighting to support eye care & posture correction
- Compact, Lightweight, & Portable design that clips onto most eyeglass frames—no need for new gear or style compromises
- Delivers subtle alerts using haptic feedback to encourage better posture and screen behavior without interrupting your routine
- No cameras, no invasive tracking—safe for schools, offices, and personal use
- Aimed to be priced at \$25–30 to make it affordable & scalable

EyeShift acts as a Habit-Building Wearable for Your Eyes

Why Other Solutions Fall Short

- Bulky & expensive clinical tools only used in ophthalmology labs
- Mechanical posture braces are uncomfortable, non-personalized, and always-on
- Most products solve just one problem, not the habit forming ecosystem



WHY NOW? — The Problem Is Urgent and Escalating

- Screen time has surged across all age groups, straining vision & posture like never before
- High myopia is rising at a global scale, fueled by prolonged close-up screen exposure
- Neck pain, backaches, & poor posture are showing up earlier—especially in students & professionals
- Eye strain, disrupted sleep, & fatigue are becoming the norm in digitally dependent lifestyles
- Yet, no compact, affordable tool exists to help users self-correct these habits—until now

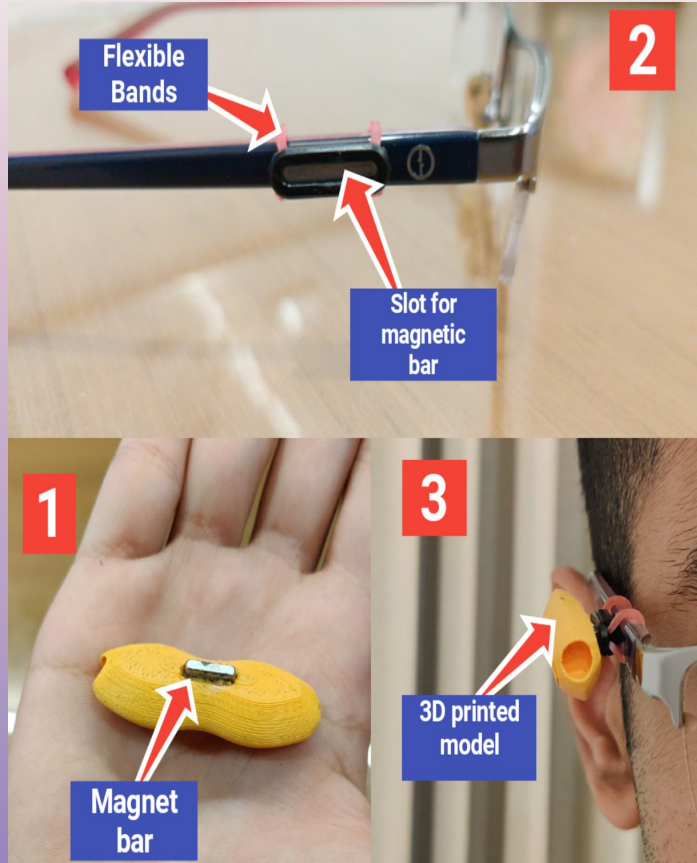
A SEAMLESS CLIP-ON DESIGN TO FIT YOUR LIFESTYLE

Why EyeShift's Clip-On Works for Everyone

- Attaches to your existing eyeglass frames — no need to buy special glasses
- Fashion-neutral design that doesn't compromise your look
- Easily removable and quick to attach
- Works comfortably in everyday use — school, office, or home

How to Attach the Device

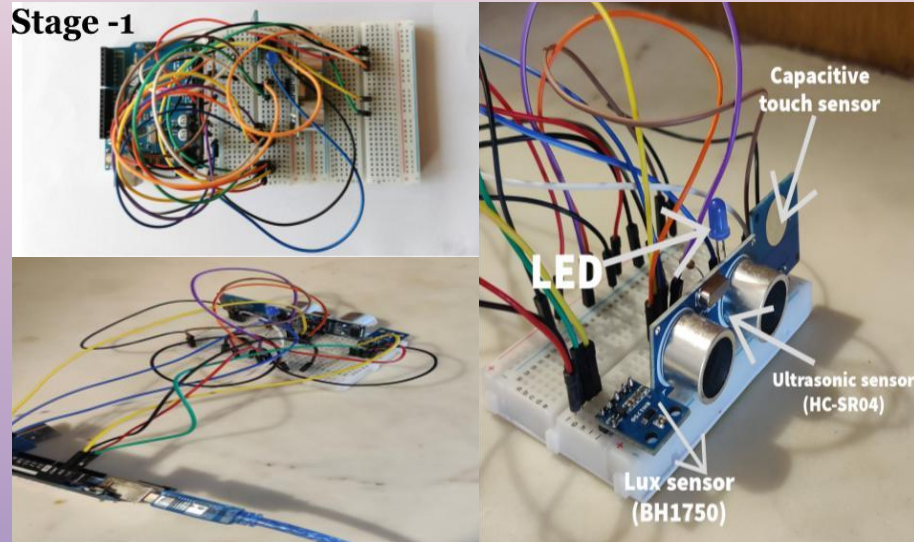
- Insert device with a Magnet Bar(fig.1) located at the backside into the slot(fig.2)
- Slide Flexible Loop Adapter onto the glasses' temples (available in 3 sizes for different glass temples)
- Snap the Device On using the magnetic slot for secure and removable attachment(fig.3)



STAGES OF DEVELOPING EYESHIFT

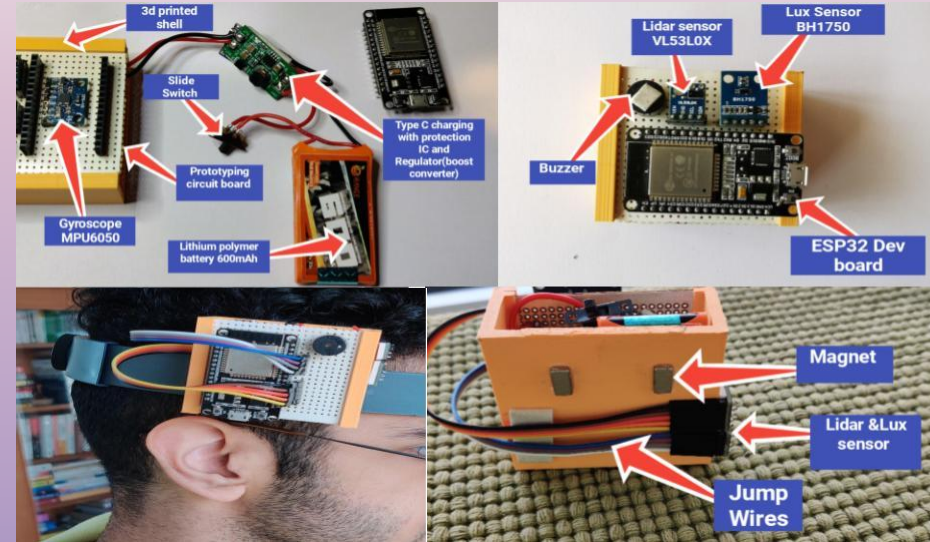
PROTOTYPING ON BREADBOARD USING ARDUINO UNO FOR STAGE 1

Stage -1

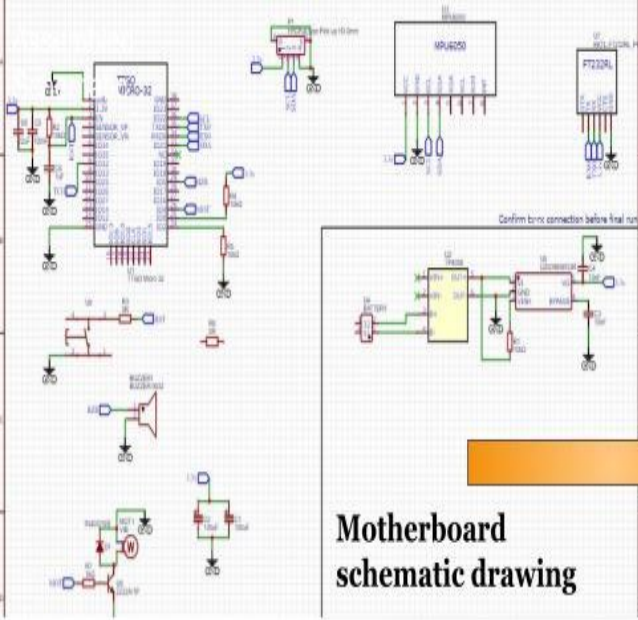


The device's fundamental operations and basic functionality were tested to identify any errors prior to Stage 2

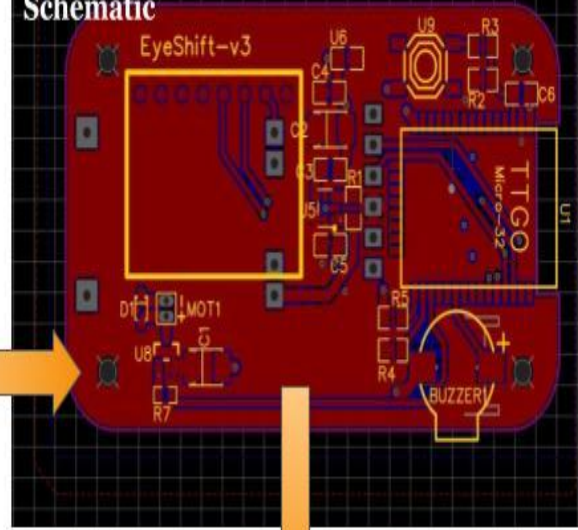
REDUCTION IN SIZE USING PROTOTYPING CIRCUIT BOARD FOR STAGE 2



The device was mounted on a headband to test its functionality and features

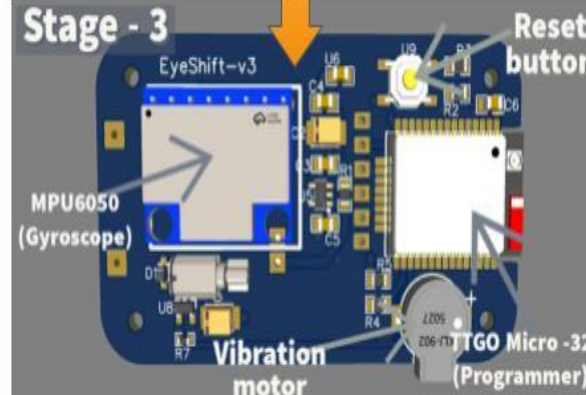


Assembled Schematic

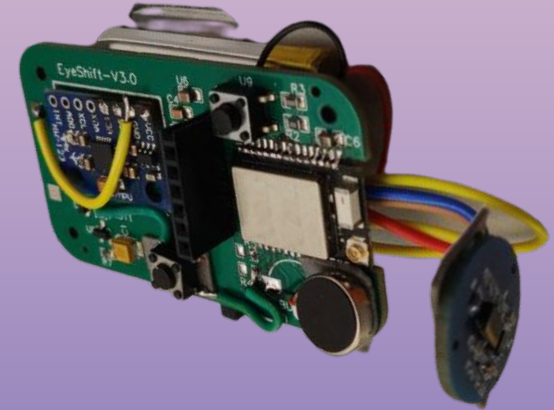


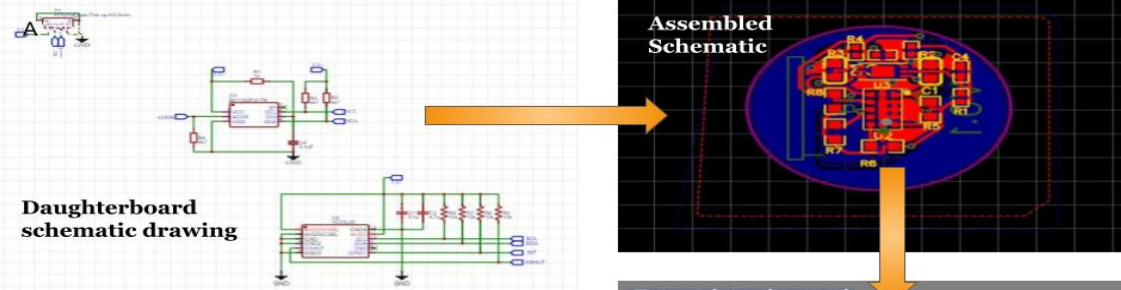
Resistors and capacitors with power supply:

Name	Designator	Footprint
TP4056	U2	TP4056
10kΩ	R4,R1,R2,R0	805
LDS3985M	U5	SOT-23-5
10nF	C3,C4	C0805
100nF	C5	C0805
22uF	U6	C0805
1uF	C6	C0805
100uF	C1,C2	CAP-SMD
1kΩ	R7	R0603
22uF	U6	C0805

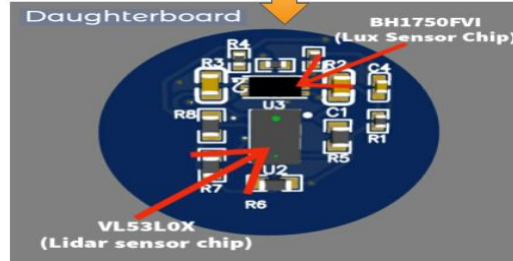


Assembled PCB schematic of the Stage 3 motherboard, used for user testing





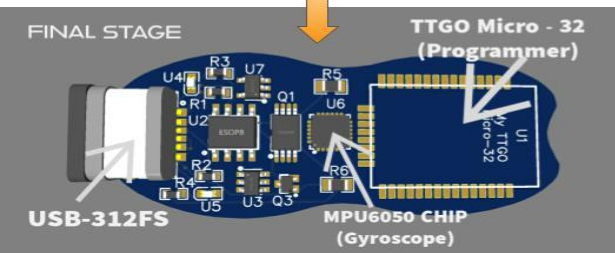
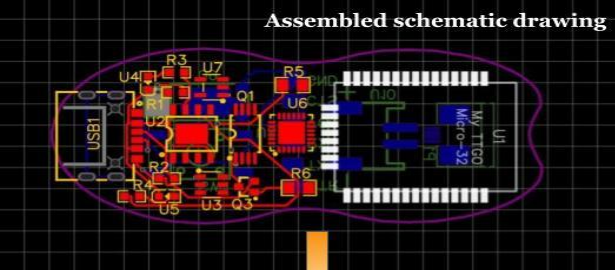
Assembled PCB schematic of the Stage 3 daughterboard attached at the front of the device

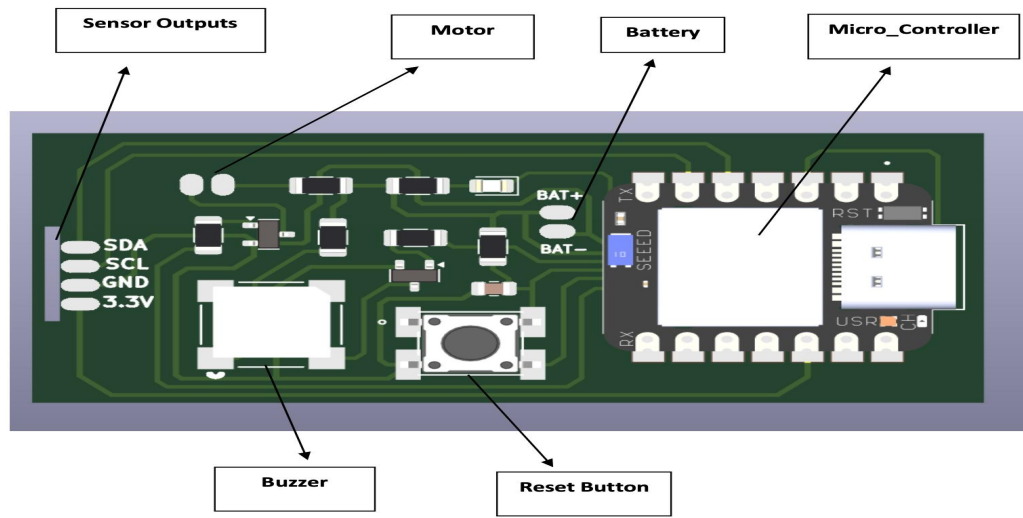


Resistors and capacitors with power supply:

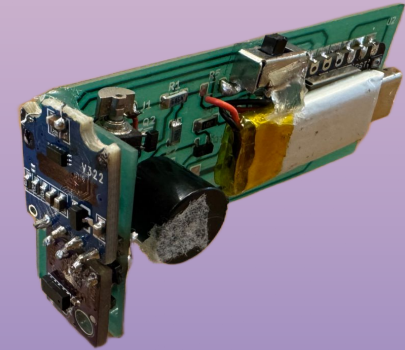
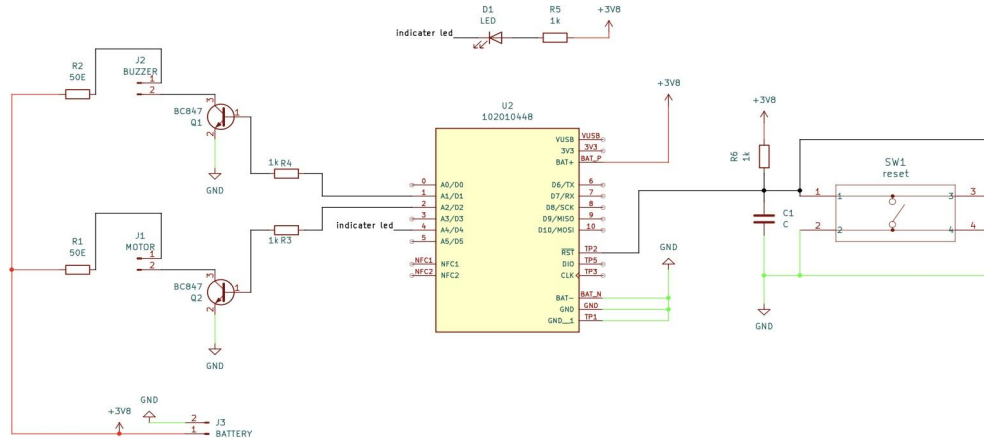
Name	Designato	Footprint
FPC-SMD_	P1	FPC-SMD_
CONN-SM	U10	CONN-SM
BSS138W	Q3	PG-SOT32
SC8205A	Q1	TSSOP-8_
5.1k	R1,R2	R0603
1kΩ	R3,R4	R0603
OR	R5	R0805
100R	R6	R0805
My TTGO	U1	MY TTGO
TP4056_C	U2	ESOP-8_L
DW01A	U3	SOT-23-6

Stage-4 Concept Motherboard Design with Dimensions: 37mm x 10mm x 5mm

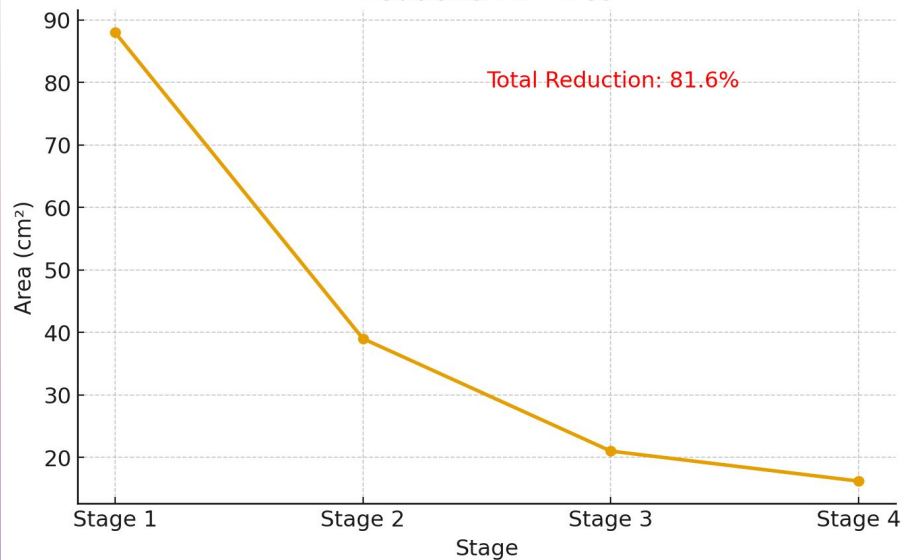




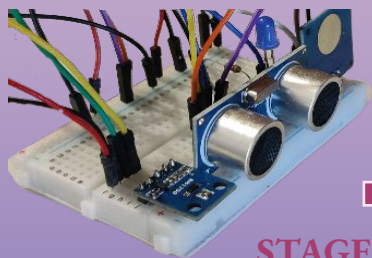
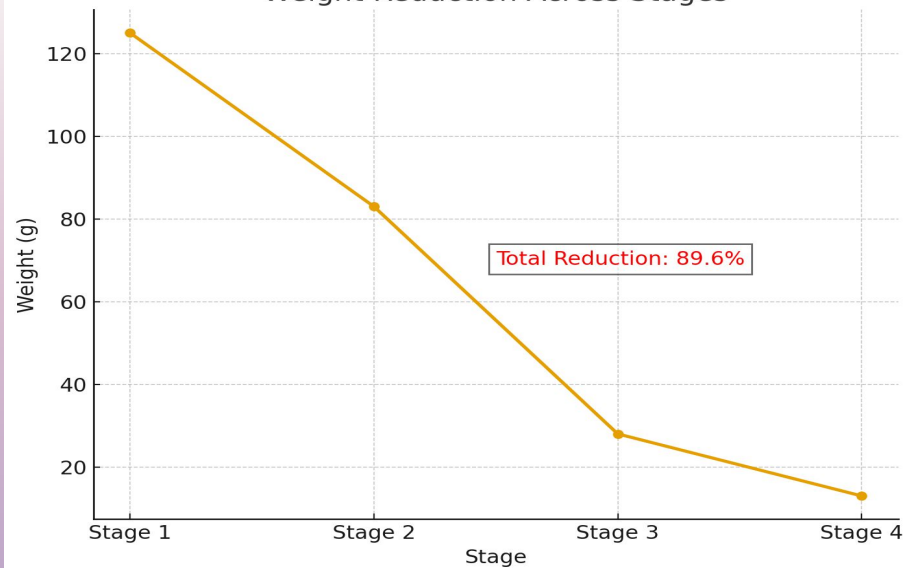
Assembled PCB
schematic of the Stage
4 motherboard and
daughterboard



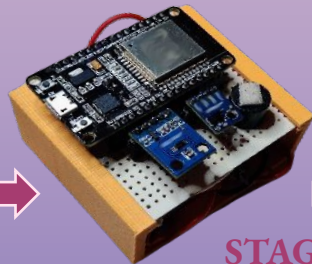
Reduction in Area



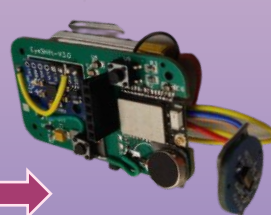
Weight Reduction Across Stages



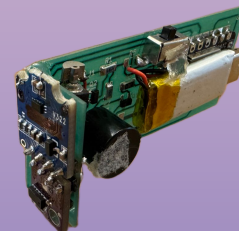
STAGE 1



STAGE 2

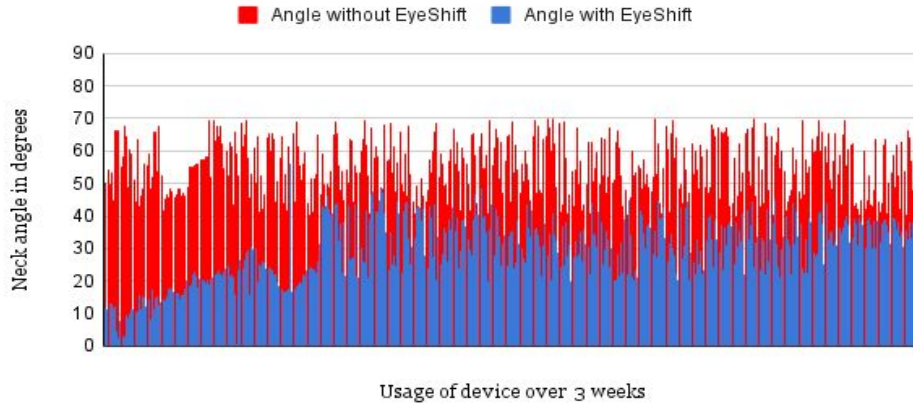


STAGE 3

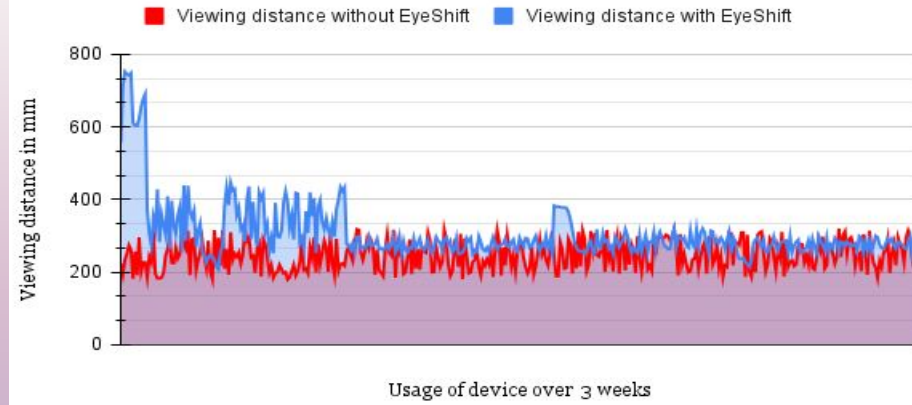


STAGE 4

Improvement in neck angle before & after using EyeShift (while using electronic device)



Improvement in viewing distance before & after using EyeShift (while reading)



Data Analysis & Results Demonstrating Improvements Before and After Using EyeShift

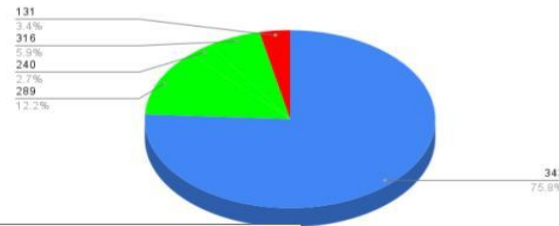
Conditions:

Poor lighting <150lux ■

Good lighting >150lux ■

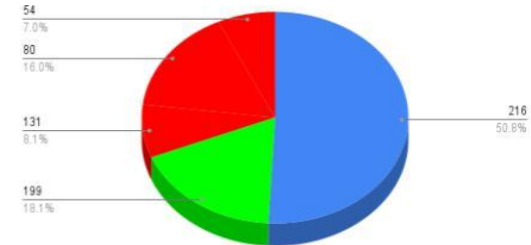
Ideal lighting >200lux ■

Ambient lighting in lux with EyeShift(while studying)



Poor lighting - 3.4%
Good lighting - 20.8%
Ideal lighting - 75.8%

Ambient lighting in Lux without EyeShift(while studying)



Poor lighting - 31.1%
Good lighting - 18.1%
Ideal lighting - 50.8%

INFERENCE FROM DATA COLLECTED

A 16-week pilot study was conducted with 8 family members using 5 Stage-3 EyeShift devices mounted on the temples of eyeglass frames. In the initial phase, data was collected solely on posture, viewing distance, and ambient lighting. Future testing phases will expand to include features like blink rate tracking and focus level detection.

- Weeks 1–8: Participants wore the device without receiving any alerts to passively monitor their natural habits related to eye-to-screen distance, posture, and lighting.
- Weeks 9–16: The same procedure was repeated, but this time with device alerts activated to prompt corrective action.

Results from the second half of the study showed noticeable improvements. Users gained better control over their reading distance, posture, and lighting environment. The alerts served as effective reminders, helping users become more mindful of their visual habits.

Initially, participants exhibited poor neck posture, suboptimal viewing distances, and inadequate lighting—without self-correcting. EyeShift played a key role in helping them build healthier habits through consistent feedback and behavioral nudges.

**Total Funding Received So Far for EyeShift is
almost 7,200\$**

UI/UX Design for Companion App

React Native – cross-platform mobile app development

React Router – seamless client-side navigation

Backend:

Node.js – scalable, event-driven runtime

Express.js – lightweight framework for RESTful APIs

Database:

MongoDB – document-oriented NoSQL database for flexible data handling

API Architecture:

REST APIs (via Express.js) – handling CRUD operations, authentication, and structured endpoints

Powered by AWS and Firebase for hosting and notifications, the app seamlessly connects with the EyeShift wearable to deliver real-time nudges and insights on posture, screen distance, and ambient light — helping users build healthier EyeCare & Posture habits.

EYESHIFT

 Email Address

 Password

[Forgot password?](#)

Sign In

Don't have an account? [Sign up](#)

EYESHIFT

Create Account

Start your journey to better eye health

 Full Name

 Email Address

 Mobile Number

 Password

 Confirm Password

☐ I agree to the [Terms of Service](#) and [Privacy Policy](#)

Continue

Already have an account? [Sign in](#)

← Profile



Shaurya Khosla

Full Name



shauryakhosla857@gmail.com

Email Address



9805052401

Mobile Number



Notification Settings

Logout


Dashboard


Alerts


Profile

Device Dashboard

Connected to: EYESHIFT

Head Angle

Current reading from device

-4.02°

Data from store



Distance

Current distance reading

13.1 cm

Data from store



Ambient Light

Current light level reading

70.0 lux

Data from store



Service ID: 6e400001-b5a3-f393-e0a9-e50e24dcca9e

Characteristic ID:

6e400004-b5a3-f393-e0a9-e50e24dcca9e

● Device connected

EYESHIFT



● Updating...

776.7 lux

Ambient lighting



31.6 cm

Viewing Distance



+19.7°

Posture



Last updated: 3:38:24 AM

Data refreshes automatically



Dashboard



Alerts



Profile

Notifications



Stay updated on your eye health alerts



Poor Posture Detected

You've been slouching. Please adjust your posture.



Screen Too Close

Move back to maintain proper viewing distance.



Low Ambient Light

Increase lighting for better eye health.



Dashboard



Alerts

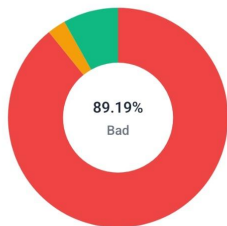


Profile

← VIEWING DISTANCE

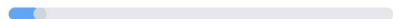
Daily

Weekly



- 89.19% (Low) [Bad / High Risk]
- 2.7% (Adequate / Moderate)
- 8.11% (Good / Healthy)

Total Good Time 8.11%



Dashboard



Alerts

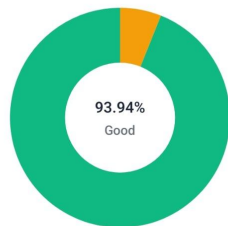


Profile

← POSTURE

Daily

Weekly



- 0% (Low) [Bad / High Risk]
- 6.06% (Adequate / Moderate)
- 93.94% (Good / Healthy)

Total Good Time 93.94%



Dashboard



Alerts

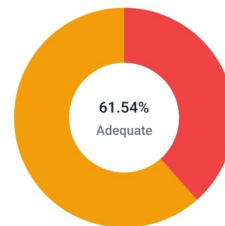


Profile

← AMBIENT LIGHTING

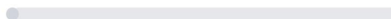
Daily

Weekly



- 38.46% (Low) [Bad / High Risk]
- 61.54% (Adequate / Moderate)
- 0% (Good / Healthy)

Total Good Time 0%



Dashboard



Alerts



Profile

← Notification Settings



Posture Angle Range

Alert when posture angle is outside optimal range

Minimum Angle (degrees)

Maximum Angle (degrees)

Optimal angle range: 80° - 110°



Viewing Distance Range

Alert when outside optimal distance range

Minimum Distance (cm)

Maximum Distance (cm)

Optimal range: 50cm - 70cm



Ambient Lighting Range

Alert when lighting is outside range

Minimum Light (lux)



Dashboard



Alerts



Profile

← Notification Settings

Optimal angle range: 80° - 110°



Viewing Distance Range

Alert when outside optimal distance range

Minimum Distance (cm)

Maximum Distance (cm)

Optimal range: 50cm - 70cm



Ambient Lighting Range

Alert when lighting is outside range

Minimum Light (lux)

Maximum Light (lux)

Optimal range: 500 - 1000 lux

Save Settings



Dashboard



Alerts



Profile

EYESHIFT

Logout

Welcome back,

Shaurya Khosla

shauryakhosla857@gmail.com

Experience the future of eye tracking with our advanced smart goggles. Monitor your eye movements and environment in real-time.

👁️ Connect to Eye shift

🏠 Go to Dashboard

Real-time Monitoring



Head Angle

Track your head movement and orientation in real-time



Ambient Light

Monitor surrounding light conditions for optimal display



Bluetooth Connected

Seamless wireless connection to your device