

Halo Helmet TEAM: 2-STROKE

Judson Cavanaugh, Ben Brooks, Gregory Smith,
Lucas Fisher, Kyle Russell

Meet THE TEAM



Ben Brooks

*Team Lead
Communication Lead*



Judson Cavanaugh

*Lighting Lead
Microcontroller Lead*



Lucas Fisher

Sensing Lead



Gregory Smith

Circuits Lead



Kyle Russell

*Code Lead
Web Design Lead*



Pain Points RIDER CHALLENGES

01

Lack of Visibility

Hard to see bikers on the road. Many bikes have poorly placed indicators, if any at all. Enhancing visibility can make both other drivers and the biker more aware of surroundings.

03

Low Universality

Hard to find a system that works on different bikes.

02

Poor Alternatives

Expensive & Low Visibility

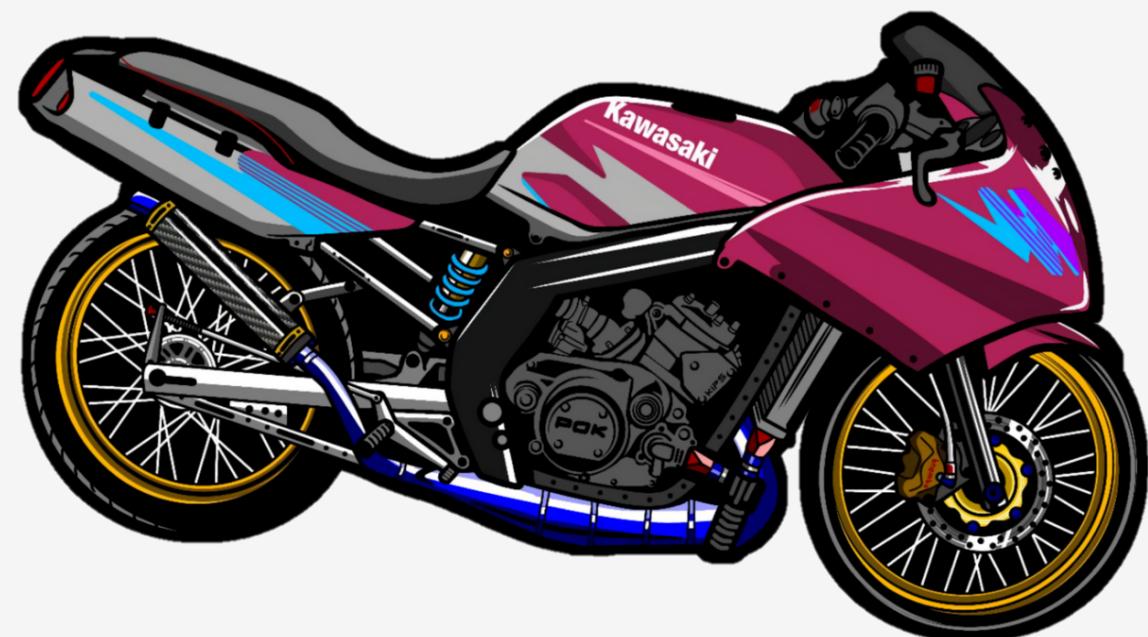
04

Safety

Other drivers can be very dangerous to bikers.

User Persona

JOHN MOTORCYCLE



Bio

John is a cashier at a local fast-food restaurant. He enjoys movies, sports, and spending time with friends and family. Most of all, he enjoys the freedom his motorcycle gives him.

Goals

Enhance Safety
Enjoy his ride

Behaviors

Rides motorcycles recreationally and to work/school

Our SOLUTION

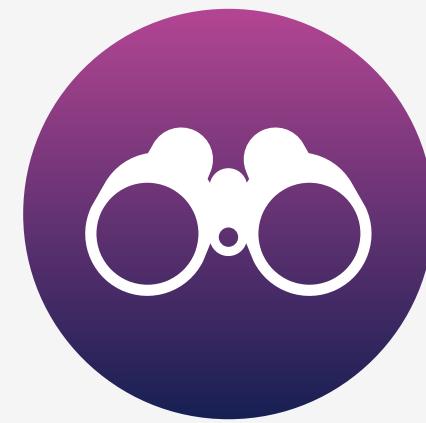
"A High Visibility and Car-Sensing Motorcycle Helmet"

A piece of wearable technology to enhance visibility of the biker to other motorists and the visibility of other motorists to the biker.

- Must be visible from a certain distance
- Must detect vehicles from specific distances
- Must operate given general environmental factors



Product DESCRIPTION



Must be visible from a certain distance

Wearable LED matrix panels
Glowing and flashing, works with turn signals



Must detect vehicles from a specific distance

Ultrasonic sensors
Detects cars behind the rider
Alerts rider of cars in blind spot



Must operate given general environmental factors

Ingress protection
Sealed against dust and rain
Will not harm wearer in inclement weather



“In 2021, there were 5,932 motorcyclists killed — 14% of all traffic fatalities” [2].

DESPITE

“accounting for just 3% of all registered vehicles in the country” [1].

Competitive ADVANTAGE

- Wearable
- Portable
- Compatible
- Nighttime Visibility
- Safety



REFERENCES

- [1] J.D. Power and Associates, “Motorcycle vs. Car Accident Statistics - J.D. Power and Associates,” J.D. Power and Associates, <https://www.jdpower.com/motorcycles/shopping-guides/motorcycle-vs-car-accident-statistics> (accessed Sep. 6, 2023).
- [2] National Highway Transport Safety Administration, “Motorcycle safety,” <https://www.nhtsa.gov/road-safety/motorcycles> (accessed Sep. 5, 2023).