Project Light Wear

Michael Petitclerc & Sabrina Shipanock

GitHub Repository

Montreal is definitely an up and coming bicycle city, but not quite on the same pages of places like Ottawa. It can be a little intimidating to navigate around on the bike paths, let alone travel along traffic when one isn't around. A majority of bikers do not practice proper safety etiquette, and drivers are only getting more and more impatient. Not only that, but the night comes early during most times of the year increasing even more the hazards of biking on the roads. Me and Sabrina feel a need to attempt to make the city a little more welcoming to bikers, new and old, by creating a wearable that oozes personality in form of safety practices and at the same time, doesn't look like you're a cross guard.

Our idea is a coat of sorts that uses LED lights and sound to create awareness of the user and those around him. Along the arms, a trail of lights lay dormant until hand signals indicating right or left turns are shown. When the hand returns to the handles, the lights turn off. This also applies to when one signals a decrease in speed or a stop. An added layered to this method is a red light on the back that will go off in these scenarios, but also when speed drops at a faster rate. To allow this, speed will be recorded internally for the safety systems, but also displayed on a screen along the user's arm. Another means of safety is a distance sensor on the back that will detect if something is approaching you at a greater speed than you currently are going. This system is inspired from car alerts for when a collision is about to happen. The rear end of a bike is the blind spot of the user, this will at the very least allow for a respectable reaction incase something is about to hit the biker. Finally, LED's will be on the back of the user and will feature several modes (including off), that will allow nearby drivers to be aware of the biker.

This object will encourage proper safety practices. Hand signals are deathly absent from most bikers, but is an invaluable means of communication with one's surrounding, particularly cars. With sensors in the back, the user can focus more on what's ahead, and the speedometer will create awareness to one's speed. This number will make a person wonder if perhaps they are going too fast in a specific area. Overall, this object will act as training

wheels that will teach the user to be safer on the road, in a way that isn't patronizing or childish. While becoming aware of bike safety, the user will also notice ill practices amongst other bikers, and be able to possible encourage their friends and family to embrace a better means of travel. Also, with the step back from means such as reflective tape, the item can be made more fashionable which will welcome new users who would otherwise disregard the object due to it's bright colors and funky pattern.

All of this seems gimmicky in a sense. If all these functions and ideas were necessary, their practices would be much more present. Fact of the matter is most modes of transportation that rely on the user and not a permit are taken for granted. No one is taught properly, beyond the realm of actually being able to use the object. I myself was part of that demographic. But particularly since my time in Montreal, I have been part of a couple of near to minor accidents where the blame wasn't always on a driver or a pedestrian. And even if it was, maybe if I had ensured my utmost safety at all times, these events could have never happened in the first place. Since then I've done my best to make a habit out of contributing to my own personal road safety beyond the bare minimum expected of bikers. It took a couple of times of putting myself in danger and almost suffering the consequences of that to realize there was more I could do. We cannot count on this process to work for everyone, it isn't sustainable. For this, I feel getting ahead of the curve and providing smart technology to bikers that will empower them and their environment to make the roads a more welcoming and safer place for all its users.

WORK LOAD

Michael & Sabrina will work together on research and product acquisition for Light Wear. This will also include various documentation such as progression and reports. Specifically, Michael will focus on the coding aspect of the project while Sabrina will insure that wiring and functionality beyond code is all in order. Other than that, making sure that the product not only works, but is high fidelity and prepared for the various variables that nature can throw at it will fall upon both colleagues.

RESEARCH

1. Lumos

I currently own a Lumos bicycle helmet, and it is a great product! It has turn signals, different flash modes, brake lights, and headlights. This product has proven that safety equipment can look good and provide wonderful function to the safety of bikers. My only problem with it is that it can only provide minimal amount of information because it only covers the head. Also, seeing as it is a helmet, one accident and chances are the product is no longer usable and another must be bought. This is a luxury item, and buying multiple ones is not something someone wants to do necessarily.

In contrast to a wearable on the body, there is so much more room for information. Also body movements allow for distinguished functions that something on a head simply could not achieve. Also, if you find yourself in a an accident, the product isn't guaranteed to be wrecked as compared to a helmet which clearly states if your head makes contact with a hard surface during an accident, the product could be compromised and should be replaced. A final tidbit of advantage of a body wearable, is that it holds potential for modulability. Customizations could be made, components added, light patterns changed, there is much more room for development as compared to a tiny helmet. This by no means belittles the Lumos, it is a wonderful product, but as I said, there potential for information is severely lacking as compared to the body.

2. Bike Balls

There was a lot talk about Bike Balls some time ago. Albeit it a great product to make oneself visible at night, I feel the product falls short after its initial shock factor; a pair of hanging testicles at the seat of a bike. Comedy is always a fair way to approach a serious issue, but I feel a product like this could be pushed further such as behaviour that changes according to the environment or the speed of the bike. At the end of the day, I feel that this product relies too much on the comedy of the concept and not that the product is actually needed in the now.

Our idea of a dynamic light that adapts to changes in velocity and to smart technology that detects possible collisions goes beyond and shatters the concept of a hanging ballsack. Comedy is good, but shouldn't be solely relied on, that is the opposite of what me and Sabrina aim to achieve. We want the product to be a in demand for its safety components and not its literal representation.

3. Sense Ace

Sense Ace is the sort of lighting system that should set the standard in lighting to make oneself visible to our environment. This product is a complex series of lighting systems location primarily in the front and bike of a bicycle. It is customizable in a sense where you can place these lights wherever it suits you best and they work just as intended no matter the location. It uses extremely bright lights, has wonderful degrees of visibility, brake lights, and many more functions. The real quicker to this product is that it remembers how you bike. It sense when you are turning, or if car headlights are hitting the bike, the time of day, etc... and it adapts to all these situations appropriately. It is a library of information that can even be processed through a smartphone app. Amongst its function is a crash operation that contacts people for you if the object senses an accident, or even if the bike is being stolen. The advantages to Sense Ace could not be counted without a dozen hands worth of fingers.

This product is a monumental inspiration to the concept behind a product that someone can wear. Me and Sabrina aspire to create something that can live up to the standard established by Sense Ace, and maybe even bring something new to the board for future creators.

As briefly mentioned, Light Wear wants to combine aspects of these researched products and merge them into something wearable and unbound to a singular bike. The space the upper body occupies is deceptively underused in consideration of road safety and this product intends to fully utilize it. We believe that a product like this has a place in the market as most current products are hard surfaced, bike or head bound objects that are not quite as versatile as they could be. Most of them also aren't quite "smart" and fulfill a singular function without deviated at all according to its environment or user. Light Wear also encourages the practice of proper road etiquette and also provides awareness to one's own faults, such as speed, during rides. This product will teach individuals to be safe, not make the individual safe all by itself.

CONCEPT IMAGES/STORYBOARDS