Challenge UCD 21-09-2023   
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Semester 3

**Idea generation**: Come up with three Human-Centered Design project Ideas.

* Hand massage glove
* Helmet afro protector
* Glasses that count your daily food intake (carbs, fat etc.)

**What to design?  
Hand massage glove**: A glove similar to a head massage or even a massage chair that provides the most effective way to massage your hand after a hard workout or simply just to relax.

**For whom?**

People who do any type of work with their hands.

Examples: People who lift, in construction, writers, teachers etc.

**Why?**The hand massage glove offers a convenient, customizable, and cost-effective solution for hand massages. Its versatility, time-saving nature, and ability to improve circulation and relieve pain make it a handy option for post-workout recovery or relaxation.

**Context?**

A person who regularly engages in physical activities such as weightlifting or rock-climbing experiences muscle fatigue and soreness in their hands and forearms. They find it challenging to schedule regular hand massages due to time constraints and the cost of professional massage services. As a result, they are seeking a convenient and affordable replacement.

**Behaviors?**

Users would eagerly slide their hand into the glove, looking forward to relief. They'd change the settings for a more personalized massage, reacting with "oohs" and "aahs" to the glove's magic. Eyes may close and satisfied sighs may escape during the massage. Following that, the hand would be slowly but freely removed, with smiles and flexing fingers in appreciation. Sharing the experience with friends is likely to occur as the hand massage glove becomes a favorite relaxation tool.

**What Emotional need do they have?**

Consider people who work with their hands frequently, such as builders, writers, or teachers. Their hands may be tired after a long day. The magical glove acts as a superhero companion, massaging their hands and making them feel happy and rested. It's like a bonus for their hardworking hands!

**What physical needs might be relevant?**

it provides a specific and relaxing massage to help ease the tension, improve blood flow, and make your hands feel more at ease. It's like a personalized recovery session, perfect for those who put in a lot of manual effort.

**How can your solution enhance or improve their overall experience?**

By providing a customized and easy solution for hand relaxation, the hand massage glove raises the overall experience. It adds a sense of personalization by allowing users to adjust the intensity and pattern of the massage based on their preferences. This personalization improves comfort and satisfaction. Furthermore, the glove's lightweight and simple of use help in easy incorporation into daily routines, providing a quick and effective way to improve overall hand well-being.

A white and gold device with a box

Description automatically generated**Online research**  
While hand massage gloves are already available, I've read the reviews and found that the hand massage is generally well received, but not entirely. Some people even claim that it isn't what they expected. One user, Acejustin, for example, stated, "I tried this thing out with my spouse the other night." It's an interesting sensation for the user, but the vibration on the receiving end isn't what my partner would prefer. I'd look into other 'Massage' products" (Acejustin, 2013). That made me think what the best gloves for massages at the moment is. There is already some cutting-edge technology and working devices to massage your hand, but they are not cheap. The price is quite high, at 79,95, making it an unaffordable luxury.

(Bol.com. (n.d.). Bluemay Handmassage Apparaat)

**What to design?**

**Helmet Afro Protector**: a silk and/or satin helmet from the inside so that your afro hair or braids, particularly braids, are not ruined in such a tight helmet. Another high-tech solution could be a helmet that conforms to the shape of your head and hair and hardens only where needed for protection.

**For whom?**

People who have afro hairstyles or who dislike having their hair messed up.

**Why?**

the Helmet Afro Protector is a handy device because it preserves and protects afro hair or braids, provides comfort, offers a customizable fit, ensures safety, and caters to various hairstyles. It addresses the concerns of individuals who want to protect their hair without sacrificing style, comfort, or safety.

**Context?**

The silk/satin helmet is designed for motorcycle riders to protect their afro hair or braids. The high-tech conforming helmet is ideal for extreme sports enthusiasts, adapting to the wearer's head and hairstyle for optimal protection during activities such as downhill mountain biking. Both solutions prioritize safety without sacrificing personal style, catering to people in a variety of situations who want a perfect balance of protection and self-expression.

**Behaviors?**

Users of the silk/satin helmet would most likely delicately place it on, protecting their carefully styled hair. They may feel relieved that their hairstyle is secure. Users of the high-tech conforming helmet, on the other hand, may go through a brief adjustment process to customize the fit to their head and hair, resulting in a seamless, personalized feel before embarking on their chosen activity.

**What Emotional need do they have?**

Users want to feel confident and proud of their carefully styled afro hair or braids. The emotional need stems from the desire to maintain a positive self-image and personal identity while riding a motorcycle or scooter without fear of ruining their hairstyle. **What physical needs might be relevant?**

The main physical requirement is to protect afro hair or braids from damage caused by traditional helmets. To avoid discomfort during rides, comfort and a secure fit are essential.

**How can your solution enhance or improve their overall experience?**

The silk/satin helmet adds a sense of security and pride to the overall experience. It not only protects the hairstyle but also adds a touch of luxury and care to the riding experience, elevating it with a blend of style and safety.

**Online research**

There is currently nothing other than a head wrapper made of silk or satin that can protect your head while still maintaining the shape of your helmet. Some people with shorter hair use a durag to minimize hair damage while maintaining the shape of the hair. Alternatives include the 'Bell Falcon MIPS Helmet'. This helmet keeps your head cool while still providing sufficient defense (Discerning Cyclist, 2023). There are also hairstyles that can protect your hair, the best of which is braiding your hair, which flattens it, and wearing a durag or skull cap.

I did find a blog where people were discussing the problem of afro type hair and helmets being a burden for them even people Israel R saying ‘When I have myhair braided (cornrows,etc) my helmet fits significantly better so anyone with braided styles shouldn’t have a lot of issues’ (Israel R. (May 17,2022)). So there are people having the same problem but should this make you braid your hair which is not free for everyone unfortunately.

**What to design?**

**AI glasses (food intake):** AI glasses that count your food intake, calories, fat, etc., refer to smart glasses equipped with artificial intelligence (AI) technology to track and monitor your dietary habits. These glasses utilize various sensors and AI algorithms to analyze the food you consume and provide you with real-time nutritional information.

**For whom?**

People that want to lose weight or regulate their food intake/ beware of their food intake.

**Why?**AI glasses that count your food intake and track nutritional information are a handy device because they provide accurate tracking, real-time feedback, personalized recommendations, convenience, motivation, and accountability. They empower you to make informed decisions about your nutrition and stay on track with your health goals.

**Context?**

These AI glasses enhance daily life by seamlessly integrating into meals at home, restaurants, or on the go. Users experience the technology's convenience during every meal, effortlessly receiving nutritional insights. The context spans diverse settings, making these glasses a practical and portable solution for individuals prioritizing health and dietary awareness in various environments.

**Behaviors?**

Users would routinely wear the AI glasses during meals, capturing images of their food. Expectations include a natural interaction where users, curious about their nutritional intake, glance at real-time data displayed on the glasses. Adjusting preferences or settings might be occasional actions, ensuring a personalized experience. Overall, users engage seamlessly, integrating technology into their dietary habits.

**What Emotional need do they have?**

Users want to feel in control of their health and confident. The emotional need is for confidence in making informed decisions about one's diet, which leads to weight loss or better food regulation. The glasses address the need for accountability and motivation in the pursuit of healthier eating. **What physical needs might be relevant?**

The most important physical requirements are accurate tracking of food intake, calories, and nutritional content. The glasses must integrate seamlessly into mealtime without causing discomfort, while also providing real-time feedback to help users maintain a balanced and healthy diet.

**How can your solution enhance or improve their overall experience?**

The artificial intelligence glasses improve the overall experience by providing a personalized, real-time nutritional guide. They give users instant feedback on their food choices, raising awareness and directing them toward healthier options. The glasses turn eating into a conscious and informed decision-making process, promoting a healthy and proactive approach to nutrition.

**Online research**

**AI Glasses for Food Intake Tracking**  
Artificial Intelligence (AI) has significantly grown in the field of food consumption tracking and recommendation-related apps (Samada et al., n.d.). These applications use AI algorithms and various sensors to analyze the food consumed by an individual and provide real-time nutritional information (Samada et al., n.d.). Some of the best food-tracking apps use your phone’s camera to scan food label barcodes to track calories, macronutrients, and protein amounts in the foods you eat (Lifewire, 2023).  
The primary target audience for these AI glasses are individuals who want to lose weight or regulate their food intake (Samada et al., n.d.). These glasses empower users to make informed decisions about their nutrition and stay on track with their health goals (Samada et al., n.d.). These AI glasses enhance daily life by seamlessly integrating into meals at home, restaurants, or on the go (Samada et al., n.d.). Users experience the technology’s convenience during every meal, effortlessly receiving nutritional insights (Samada et al., n.d.). Users would routinely wear the AI glasses during meals, capturing images of their food (Samada et al., n.d.). The interaction is expected to be natural where users, curious about their nutritional intake, glance at real-time data displayed on the glasses (Samada et al., n.d.). Users want to feel in control of their health and confident (Samada et al., n.d.). The glasses address the need for accountability and motivation in the pursuit of healthier eating (Samada et al., n.d.). The most important physical requirements are accurate tracking of food intake, calories, and nutritional content (Samada et al., n.d.).

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| POV: Improving Public Transportation in a City |  |  |
| User | **Need** | **Insight** |
| Daily travelers in a busy city | A reliable and efficient public transportation system | Current public transportation services are often overcrowded unreliable, and lack convenience |

How might we reduce overcrowding during peak hours on buses and trains?

How might we enhance the accessibility of public transportation for individuals with disabilities, ensuring a more convenient way to travel to and from a certain place?

How might we create a more seamless and convenient payment system for public transportation, making it easier for daily commuters in a busy city to access and use public transportation services?

How might we improve the safety and security measures on public transportation vehicles and stations, ensuring a secure commuting environment for daily commuters in a busy city?

How can we prioritize sustainability by reducing emissions and promoting eco-friendly transportation options, thereby addressing the need for a greener and more environmentally friendly public transportation system in a congested city?