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10/20/22

CS 4590: Project Deliverable 2

User Personas and Scenarios

Pitch: The users that are defined below are people who have suffered some sort of accident that inhibits their ability to feel things. One problem they could face is issues with feeling things precisely with their hands (nerve damage from hands). Another issue is having nerve damage on the feet so that they are unable to get a solid feel of what they could be stepping on. A last potential issue is that a user could have nerve damage on their mouth or facial area, which can be dangerous if the user has trouble swallowing or chewing food properly. With my system, I aim to fix all these issues by providing continuous user feedback to help mitigate these issues with nerve damage so that these users can live their lives before they had suffered these incidences.

User Persona 1: Jenny is a single 27-year-old woman who recently suffered an accident from touching a boiling cast iron pan for too long. She suffered significant nerve damage, but luckily she can still feel with her hands. Currently, her hands do not always work at 100% and she often has trouble getting a solid grip on things. Jenny loves to bake (especially with her nephew), go for bike rides, and do creative writing. But since the incident, she has had a lot of trouble doing all of these things.

Scenario 1: Jenny lives in a hot city, and by that all the metal poles and pipes around her can get incredibly hot sometimes. She does not have a car, but she can get to wherever she needs to be

by walking. This can get tiring sometimes so naturally Jenny will lean her hand on a pole to catch her breath. The problem is that if a pole is too hot, she could be potentially burning her hand and not even realizing it. Jenny can still use her hands in general, but she isn't able to notice these drastic temperatures. But with my sound solution, Jenny can be alerted of such things before she has the chance to touch them. Jenny can wear a modified bracelet, and by waving it close to a pipe or pole, the system will inform her of what the temperature is. If the temperature is safe enough to touch for extended periods of time, she gets a beep letting her know it's good to do so. All Jenny has to do each time is just wave the bracelet so the system knows when to activate.

User Persona 2: Craig is a social worker and single father who got into a car accident a few months ago. The accident left major damage on his legs (specifically his feet), and as a result, he has severe trouble doing basic tasks that involve walking or getting a feel for the ground. This has hit Craig hard since some of the things he loved to do involved physical movement. Some hobbies he had were biking, hiking, swimming, and also hip hop dance (but only on alternating Sundays). He also has a young son who leaves his toys around carelessly, and so Craig often has trouble walking around the maze of toys.

Scenario 2: One of the things Craig loves to do is go for a simple walk on a hiking trail. But the problem is that he can't get a good baseline for how smooth and safe the ground is around him. He can't tell small things like rocks and twigs which could potentially trip him and fall down. But with my solution, Craig can receive continuous audio feedback that lets him know what kind of obstacles he could be dealing with. He can put on a pair of headphones, and with each step he

takes, the system does a scan around his general area, and reports back to him what is in his way. An AI voice informs him of basic things like “there is a large rock 3 feet in front of you” or “watch out for the puddle close to your right foot”. All Craig has to do in return is let the system know when he’s overcome the obstacle or terrain. A tedious process yes, but with this solution, Craig can once again go for walks without having to be overly cautious.

User Persona 3: Gilbert is a retired soldier who had a mouth surgery recently. Unfortunately, the process went very wrong and now Gilbert is unable to eat or swallow properly. He was paid a large settlement to avoid lawsuits, but no amount of money can compare to the struggles that Gilbert faces every day. As an old man, he has to monitor his health constantly and keep track of the foods he eats. But with this new problem, he can’t even do basic things like that, which presents a problem.

Scenario 3: Gilbert often has to take various pills and tablets for other medical conditions. It is recommended that he takes them with a meal, but since he cannot eat properly, he doesn’t know if he is actually chewing the food or just chewing nothing while the food is stuck between his teeth and cheek. And also, he can’t tell if he has chewed enough times to know if it is safe to swallow properly. Say he thinks he’s chewed enough times to safely swallow the food, but in reality he hasn’t chewed anything at all. If he swallows, then he could potentially choke. With my sound based solution, Gilbert can receive continuous audio that lets him know when he is properly chewing, and when it is safe for him to swallow the food. A single continuous beep lets him know that he is chewing properly, and a quick double beep lets him know it is safe to swallow. If he is not swallowing, then he receives a different beep sound which lets him know to

adjust. What Gilbert has to do in return is inform the system what kind of food he is eating, and how much of it he is eating.