

Talking with Grippy: Design an intuitive haptic dialogue system for a smart wearable



Project goal

This project aims to explore and apply an intelligent conversational agent, HabInt, in interaction design of a smart wearable, Grippy. HabInt is an intelligent dialogue system partially developed by a research team at EEMCS. HabInt can learn about the user's behaviors and values by having a conversation with the user. It applies to various contexts where an e-coach or digital assistant is needed. Grippy is a smart wearable system (composed by a smart glove and a phone app) that is previously developed in a PhD project in the faculty of IDE. It helps people to deal with stress by (a) enabling the user to mark down stressful locations, (b) prompting the person to be exposed in such locations for self-training, and (c) providing support during such events. This project is to combine these two works into an embodied intelligent agent that, through communicating with users in verbal or non-verbal (e.g. haptic, non-speech sound, etc.) language, can provide personalized support in behavior change in the context of stress management.

Design requirements / deliverables

- learn about the intelligent dialogue system (HabInt).
- explore alternative uses of the dialogue system and apply it in wearable systems.
- develop a wearable system with Grippy as the expressive communication platform (the glove and / or the phone app). This system should properly align features of the dialogue system (HabInt) with the capabilities of Grippy.
- test the prototype in the context of stress management.
- research on the possibilities of this concept as a knowledge-based and expert system that could learn by itself through interacting with the user in broader contexts.

Student candidate

EEMCS student with an interest in internet of things, smart objects, intelligent system architectures and interaction design. The candidate should be tech-savvy, sensitive to subtlety in interaction, haptic interactions, audio design and expressive interfaces.

Supervisory team

This project will be coached by Catholijn Jonker (a professor in interactive intelligence at EEMCS) and Myrthe Tielman (an assistant-professor at EEMCS). You will also get help from Marco Rozendaal (an assistant-professor in interaction design in IDE) and Xueliang Li (a PhD in IDE) on interaction design of the smart wearable prototype.

When to start?

We are expecting to kick off this project in September, 2019.

Contact

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