AudiHome

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Progress report

Smart Cooking Helping Wearable

<Short Report> For the last few weeks, we have contacted Aware home and began to work on developing a home audio alert system. Based on the research, we figured out that the major source of home fire is started from a stove. This is a serious issue that cannot be overlooked since we are surrounded by a lot of sources distracting us from concentrating only on the cooking task. Especially mothers should take care of their children at the same time when they are cooking. Sometimes, they should help their kids and forget that they had something on the stove. This might result in home fire or at least burn their foods. Thus, we decided to develop a cooking helping wearable which enables the users to do multitasks while cooking. This system will help the users to not forget the foods on the stove and come back to stove at appropriate timing for each step.

<Survey> We had a survey over 32 people. According to Survey, 71% left something on stove and triggered fire alarm, 56% had experience disabling fire alarm.

<Test Feedback> On the initial test of our prototype on people, we were told to build a solid default soundboard which will guide the users how to use our system properly. Also, we received contrasting opinions on our ambient alert; some testee said they would prefer louder sound while others said current mode is good enough. Also, we were told to have a function of notifying the users of the current status of the cooking. Furthermore, the subject said that voice over notification would be better than current earcons since the system will be connected to many home appliances. We also better make it louder for the door open alert sound because the street noise was too loud in the test environment. One of the subject’s consideration was that it will be good to connect the system over the entire home but also need to have a local alert mode to not interfere any other people in the house when they do not want to be interrupted.

<Modified plan> From the survey, we found out that many people had experience burning their food on the stove because they were distracted. This led us to modify the sound design to accommodate the need to keep track of how their food was cooking on the stove using data from the temperature and time. We will sonify all four stove top temperatures and the oven. Each fire source on the stove and the oven will have its own unique sounds such as a bell, clarinet, violin, trumpet, and digital sound to make the sound distinguished. The number of notes played of the sounds will change from one to many as the temperature rises. There will be different harmony created with the same sound (do mi sol on the bell) according to the rate of change of temperature, such as two sound of bells overlapping while being played when the rate of temperature change is faster than a certain amount. There will be background music to keep the notes in a beat, and the background music will change every 5 minutes to give a sense of time elapsing. Finally, a drum beat will play in between the set of notes to gauge how the overall average temperature has risen since starting time. We will make a sound demo program on Processing to give a UI for the soundboard.

<Future plan> We are going to modify some parts of our current system to apply the advice we received from the progress presentation over the weekend. We will record the temperatures and time spent on real cooking for popular dishes such as pasta and pancakes. We will finish gathering the proper sounds by Tuesday, July 17th, 2018 and start coding on Processing. From Wednesday, July 18th, 2018 to Friday, July 20th, 2018, we will test and collect each subject’s preference on different alert sounds and modify the prototype based on the feedback we get from them. The next week, we are going to reflect the people’s opinion on the prototype and modify the sound design.

<Future work schedule>

July 12 - apply feedback from progress report on our working plan, researching cooking times

for foods.

July 13 - Submit the Progress report

July 17 - Coding on Processing

July 18 ~ 20 - testing days

July 19 - midterm HW due, implementation meeting

July 19 - Analyze the feedback

July 20 - apply feedback, make final prototype

July 23 - do more work if possible before final project

July 24 - Final Project Deliverable Due

July 26 - Final Project Presentation