

FOX :Fuzzy Order eXperience

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- User Experience -

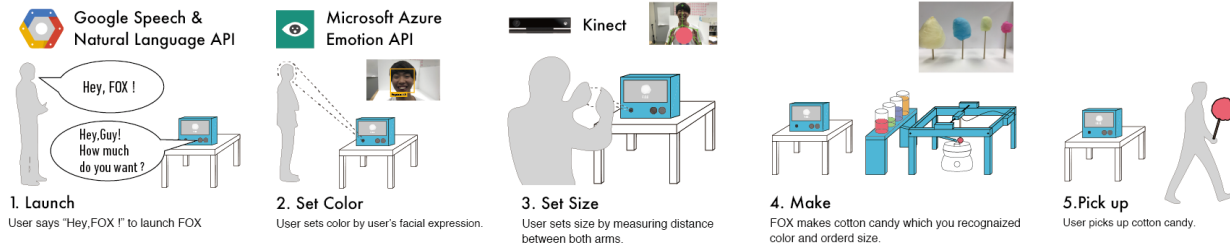


Figure1 : User Experience

ABSTRACT

We propose a cotton candy maker with a perceptual user interface, and it is an instance of our concept of "Fuzzy Order eXperience: FOX". When we order something to eat such as ice cream or doughnut, we choose size and flavor, however, it does not always match with implicit and fuzzy desire. In FOX, a system guesses each customer's desire with using sensors, emotion API and natural language API. For UIST 2018 SIC, we will develop a cotton candy maker as an implementation of this concept.

CCS CONCEPTS

Human-centered computing, Human computer interaction (HCI)

KEYWORDS

Makeblock, Robotics, Perceptual user interface

1. System Overview

Our system consists of PC, microphone, speaker, Microsoft Kinect, cotton candy maker, and MakeBlock XY-plotter. It utilizes Microsoft Azure emotion API and Microsoft Kinect to guess a customer's implicit and fuzzy desire from his/her body language and facial expression (Figure1). It controls solenoids to put adequate colored sugar into a cotton candy maker, and then

moves a stick in order to make a cotton candy of the size that the customer specified with arms (Figure2).

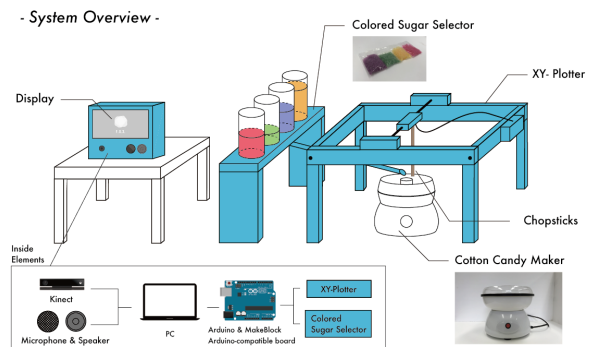


Figure2: System Overview

2. User Experience

At first, a customer says, "Hey, FOX" to launch our system using Google Natural Language API. Next, it decides the color of sugar with his/her emotion guessed from facial expression. It takes a picture of the customer and send for Microsoft Azure Emotion API. It classifies his/her emotion to "Anger", "Contempt", "Disgust", "Fear", "Happiness", "Neutral", "Sadness", "Surprise", and the color of sugar for cotton candy is decided from our mapping list of emotions and colors. Then, he/she shows the size of cotton candy that he/she wants with body language. Our system measures the distance between both arms using Kinect. This data

is used for deciding the volume of cotton candy. Once his/her implicit and fuzzy desire is converted into an order, our system starts to make a special cotton candy for him/her by controlling solenoids and XY-plotter connected to Makeblock's Arduino-based boards. A solenoid for the selected color puts sugar into the cotton candy maker, and a stick is set to the XY-plotter and turned for drawing a circular arc in the cotton candy maker. As far as we tried, The amount of sugar put in was able to change the size of the cotton candy.

3. Discussion

It is difficult to recognize a customer's implicit and fuzzy order even for human. Thus, a customer has to express his/her desire unknown to himself/herself. However, in the future, a system with Artificial Intelligence might guess such a desire, and fabrication technologies might produce the special order. In such a near future, a system of perceptual user interface and fabrication machine might be popular for "Fuzzy Order eXperience". Thus, in this contest, we propose the system described above.