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# Cultivating the Performance of Presentation through Monitoring Presenter's Action

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**Abstract:** This paper describes a supporting method of academic presentation and a developed system to improve the presentation performance. We focus on the motor skill, whose analysis is based on presenter's gesture and gaze-direction. We design the framework to improve presentation skill and develop the prototype system that detects gestures and gaze-directions.

**Keywords:** Presentation, Gesture, Gaze-direction, Physical skill

## Introduction

The importance of presentation is getting higher. Therefore presentation skill is regarded as one of essential skills for everyone. It's very worthy to support developing presentation skill. Presentation skill consists of three factors: presence, scenario and delivery skill [1]. We think presentation is a kind of live performances. Therefore we focused especially on delivery skill. Delivery skill is how to inform to other people. For example, it includes how to speak, how to draw attention of audiences and so on.
We designed the framework to improve the performance. Generally, we get some significant information from the direction of speaker's eyes, facial expressions, body motion and so force. We focus on gesture and gaze-direction.

## 1. The framework

### *1.1 Purpose*

The framework is designed to make our presentation better by developing our delivery skill. The purpose of presentation is to give convey something. Therefore the presenter needs to inform what she / he conveys and impresses her / his presentation.

### *1.2 Gesture*

Gesture is very powerful for communication. Gesture can inform many information and support to think [2]. When we convey to others anything, we use not only verbal language but also body language. Therefore we expect gesture helps to convey some information and to draw attention of audiences.
At the first step to use gesture effectively in presentation, we need to get used to using gesture in presentation. Many Japanese people have a feeling of resistance to make gesture. Therefore we develop a gesture recognizing system.

### *1.3 Gaze-direction*

Gaze-direction is one of the important factors in delivery skill. We expect controlling gaze-direction makes the connection between a presenter and audiences. Therefore the presenter needs to control her / his gaze-direction to show faith.
Gaze-direction has the expressive function. Dr. Fukayama described the longer a person gazes others, the stronger others think about her / him [3].
Therefore we designed the system that supports to control gaze-direction. The system detects where a presenter is looking. In addition, the system advises where the presenter should look. The presenter can improve her / his presentation by the advice.

## 2. Gesture Recognition System development

The system we developed distinguishes a gesture of a presenter. It also controls an application associated with the presentation: Power Point, Open Office Impress and Apple Keynote. In addition, it has some extra functions to show some effects (describe in 2.2).

### *2.1 Algorithm*

This system distinguishes a gesture of a presenter with least square method.
A presenter wears a wireless 3D acceleration sensor on her / his right hand. The sensor sends acceleration data on the wireless network and the system receives the data. The stored data in such a way are used to detect one of the preset patterns. The system adapted least square method in this process. When the system successfully detects the action pattern, it starts to control the OS and applications.

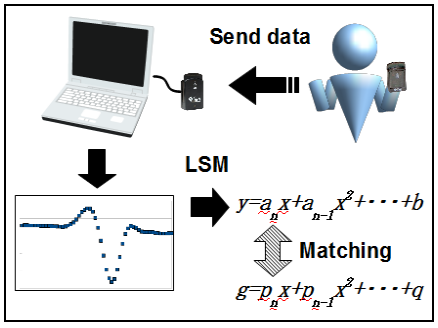


Figure 1. The gesture recognizing system

### *2.2 Gesture patterns*

Our system distinguishes several gestures and functions. This paper describes 2 pairs of gestures and functions as follows.

1. “Push” – Update slide
‘Push’ is a basic motion that a presenter hold out her / his hand to side. Then the system changes a slide to next one.

2.‘Tap’ – Sound Effect
‘Tap’ is a motion that a presenter taps screen 2 times. Then the system makes a sound. This function draws audience’s attention and informs importance of slide at that time.
We expect this function is different from other functions. Other functions operate the presenter’s PC and an application on it. On the other hand, the system with this function doesn’t only operate the PC but also expressly draw attention of audiences.

## 3. Gaze-direction support system

We expect that gaze-direction control is as important as gestures in a presentation. Gaze-direction impresses to audiences. Some presenters gaze her / his pc or screen. We think it is not good in terms of interaction. The presenter needs to look at audiences.

### *3.1 Devices*

Our system uses Wii Remote Controller as IR sensor and wireless network device.
The presenter wears LED glasses we developed. It has LED lights on its both edges.

### *3.2 The System*

The system distinguishes the direction of a presenter's face by trace LED Glasses. If a presenter takes a glance on screen or PC, the system suggests that the presenter should look at other points. We expect that the presenter will be able to control the direction of the face without the system through experiences of using this system.
This system uses multiple Wii Remote Controllers. They are installed in a conference room (see below figure). The PC receives IR data and recognizes the direction of the presenter's face. The system suggest moving the point the presenter looking if the presenter is looking amiss point, for example, Screen or PC.

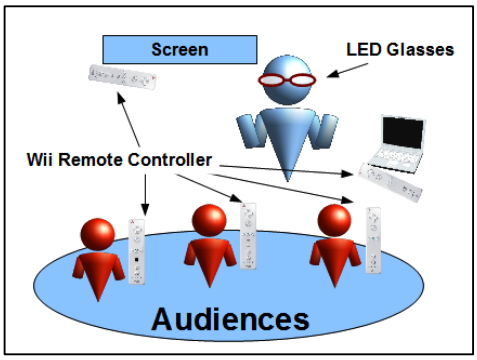


Figure 2. Gaze-direction support System

## 4. Conclusions

We described the framework for sake of cultivating a performance in a public presentation. The framework is designed based on gesture and gaze-direction. We developed the gesture recognizing system and gaze-direction control system. We'll improve these systems for the feasible use for the preparation phase and the real.
We expect it fascinates our presentation by way of improvement of our delivery skill. This study has a great potential to be able to improve presentation skill.

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