Development of a Virtual Environment for Visualizing Emotions

National Institute of Information and Communications Technology (NICT)
Osaka, Japan
Michelle Wu
7/10/2015

1 PROGRESS

Visual Application

- ◦ Imports any .obj file and displays animated particles at each vertex location.
- ◦ Particles change colors according to mood type.
- ◦ Refactored code.
- ◦ Built more complex tree models to test with, and so far all are working.

EEG

- ◦ Tested EEG device near the 3D wall. There is a lot of noise affecting the data read in, so I need to determine what is the cause and filter it out.
- ◦ Tested EEG device on a co-worker in the lab, and the data output is good.
- ◦ Closing and opening of the eyelids is easily distinguishable in the readings.
- ◦ Tried watching different video clips intended to induce feelings of happiness and sadness, as well as tried listening to different types of music with the headset on. There are noticeable changes in the output, but need to test on more people in order to garner any conclusions.

UPCOMING GOALS

Visual Application

- ○ Get approval from Inoue-san in order to receive access to the REI (Ray Emergent Imaging) library, which I will use in order to transfer my Unity instances to the 3D wall.
- ○ Meet with Yasuda-san, who will help with usage of the library.
- ○ Adjust graphics accordingly due to depth limitations of the screen.
- ○ Continue working on beat synchronization.

EEG

- ○ Determine sources of excess noise captured in the location of the 3D wall in order to filter it out.
- ○ Continue gathering data for analysis by testing the device on myself and others.
- ○ Narrow down which video clips will induce greater reactions and changes in brain activity.
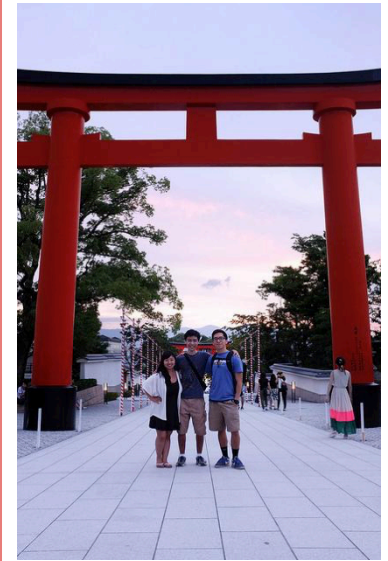
EXPERIENCING JAPANESE CULTURE

Tanabata Evening at Tennoji Temple

Fushimi Inari Taisha in Kyoto

PRIME 2015

Bamboo forest by the shrine

Candle lighting at Tennoji

Dotonbori during daytime

JAPANESE CUISINE

いただきます

Honey brick toast cafe

Huge cheese tart

Mango shaved ice at Shitennoji

Ramen ordered from a vending machine

Japanese melon cream-filled bread at the train station

Tried Natto from the supermarket

ACKNOWLEDGMENTS

ありがとうございました

National Institute of Information and Communications Technology (NICT)
- ◦ Professor Shinji Shimojo, my mentor in Osaka
- ◦ Dr. Yasushi Naruse, for lending his EEG device
- ◦ Masanari Goto & Megumi Kanagawa, who helped with the initial commute to the lab, along with other logistics
- ◦ Everyone else at NICT, who have made me feel very welcome

University of California, San Diego (UCSD)
- ◦ Professor Jurgen Schulze, my mentor in San Diego
- ◦ Madhvi Acharya

PRIME, for their financial support and guidance
- ◦ Teri Simas, for her additional financial support
- ◦ Dr. Gabriele Wienhausen
- ◦ Jason Haga
- ◦ Jim Galvin
- ◦ PRIME alumna Haley Hunter-Zinck
- ◦ National Science Foundation

Previous PRIME alumni for their advice and recommendations