Asia Haptics

1 Title

Perceptual Evaluation Methods for Haptics Research

2 Type and Duration of Workshop / Tutorial

Tutorial
15:00 - 18:00

3 Abstract (Objectives, Significance, and Impact)

Researchers and developers working in haptics have frequent needs to evaluate their haptic systems (or components) in terms of the user's perception. This requirement is natural since haptics is essentially about interaction with users. However, appropriate perceptual evaluation is not a trivial task, and haptics researchers and practitioners often have difficulty in the proper design and data analysis of perceptual experiments, which have their root in cognitive psychology. In this tutorial, we aim to help haptics researchers and practitioners, mostly with engineering and computer science background, better understand and use experimental methods for the perceptual evaluation of haptic systems by introducing experimental methods that are frequently used for that purpose.

4 Target Audience

Researchers, developers, and students who work on haptics with background in engineering and computer science but little experience in perception-based research

5 Speakers and Program

Speakers:
Seungmoon Choi, Professor, POSTECH, Korea
Shogo Okamoto, Assistant Professor, Nagoya University, Japan
Hong Tan, Professor, Purdue University, USA
Scinob Kuroki, NTT, Japan.

Program (tentative):
Basic concepts, laws, and classical methods in psychophysics
Information theory: As a useful tool to determine channel capacity, the maximum number of stimuli that can be correctly identified, without running multiple experiments.
Perceptual space: An effective tool in visualizing the relative relationships between tactile percepts on the basis of the perceptual dissimilarities between the stimuli.
Adaptation: A useful tool to investigate the mechanism of information processing in the brain without imaging or neurophysiology.

6 List of Organizers

Seungmoon Choi, Professor, POSTECH, Korea
Shogo Okamoto, Assistant Professor, Nagoya University, Japan