

Y. SATO LAB.

[Computer Vision]

Center for Socio-Global Informatics

<http://www.hci.iis.u-tokyo.ac.jp>

Visual Media Engineering

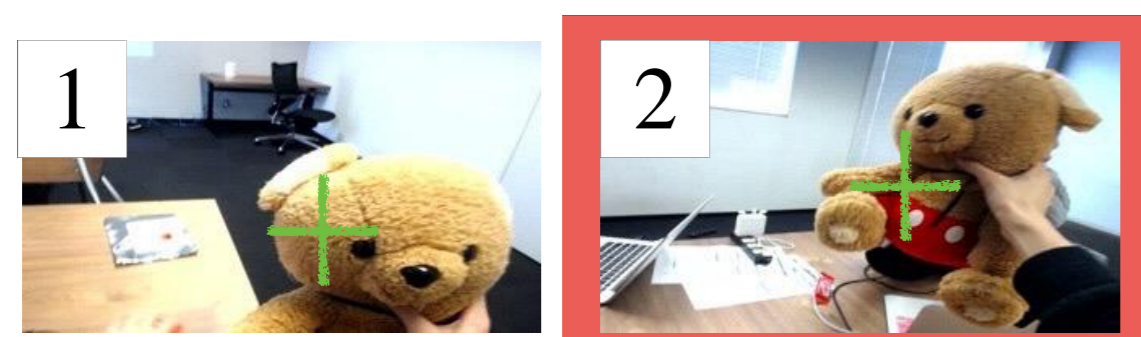
Department of Information and Communication Engineering, Graduate School of Information Science and Technology
Emerging Design and Informatics Course, Graduate School of Interdisciplinary Information Studies

Computer Vision for Human Behavior Sensing and Material Perception Analysis

Toward development of information systems which can casually offer assistance to those who need it, real-time sensing of human behaviors including visual focus of attention is important. In our group, we develop **computer vision techniques for sensing and understanding our visual focus of attention and activities in real world**, and propose their applications to human-computer interaction. In addition, we have been studying **sensing and modeling of real object appearance for material perception analysis**.

Understanding human gaze and activities

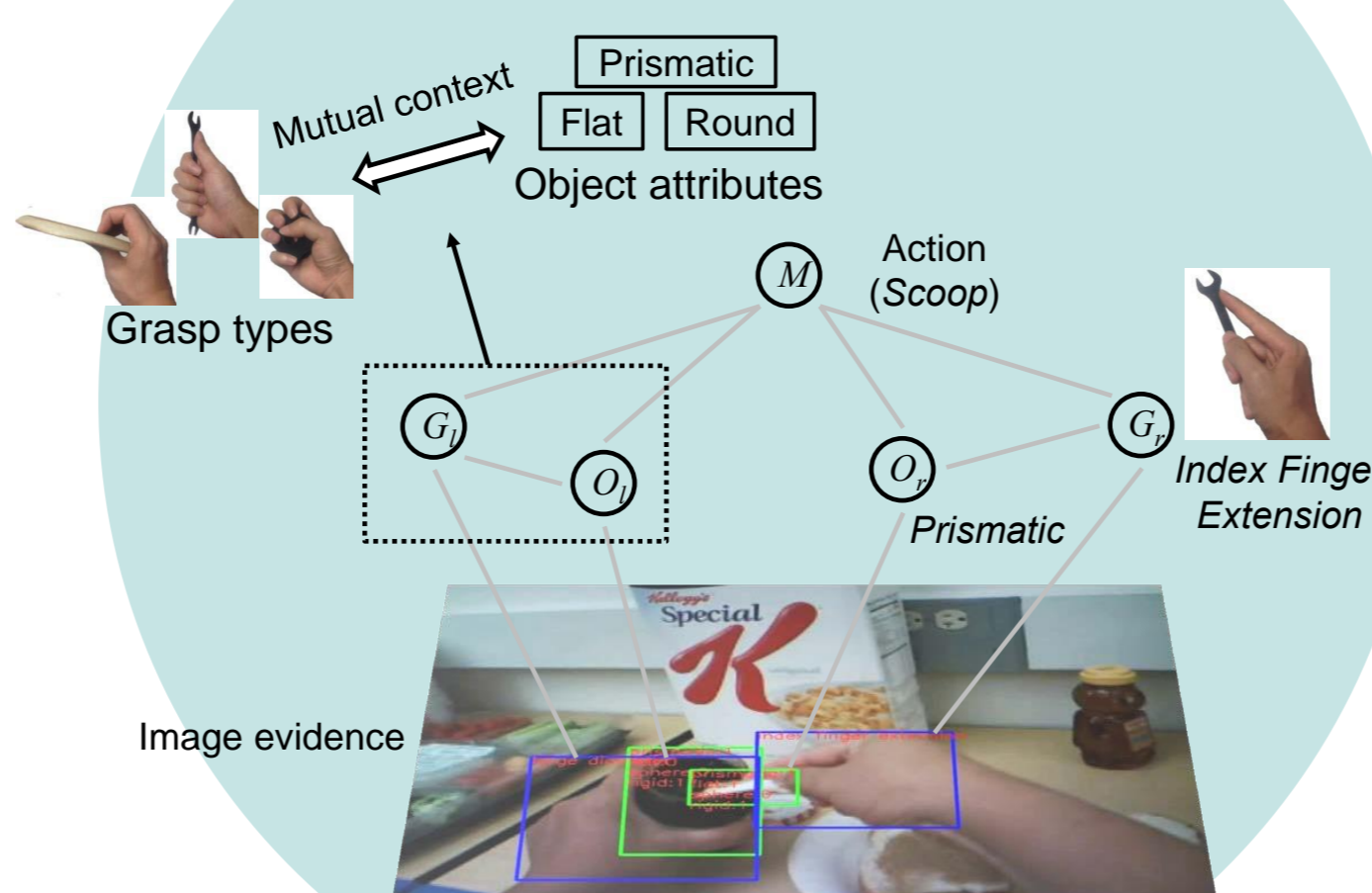
Person 1's first person video



Person 2's first person video

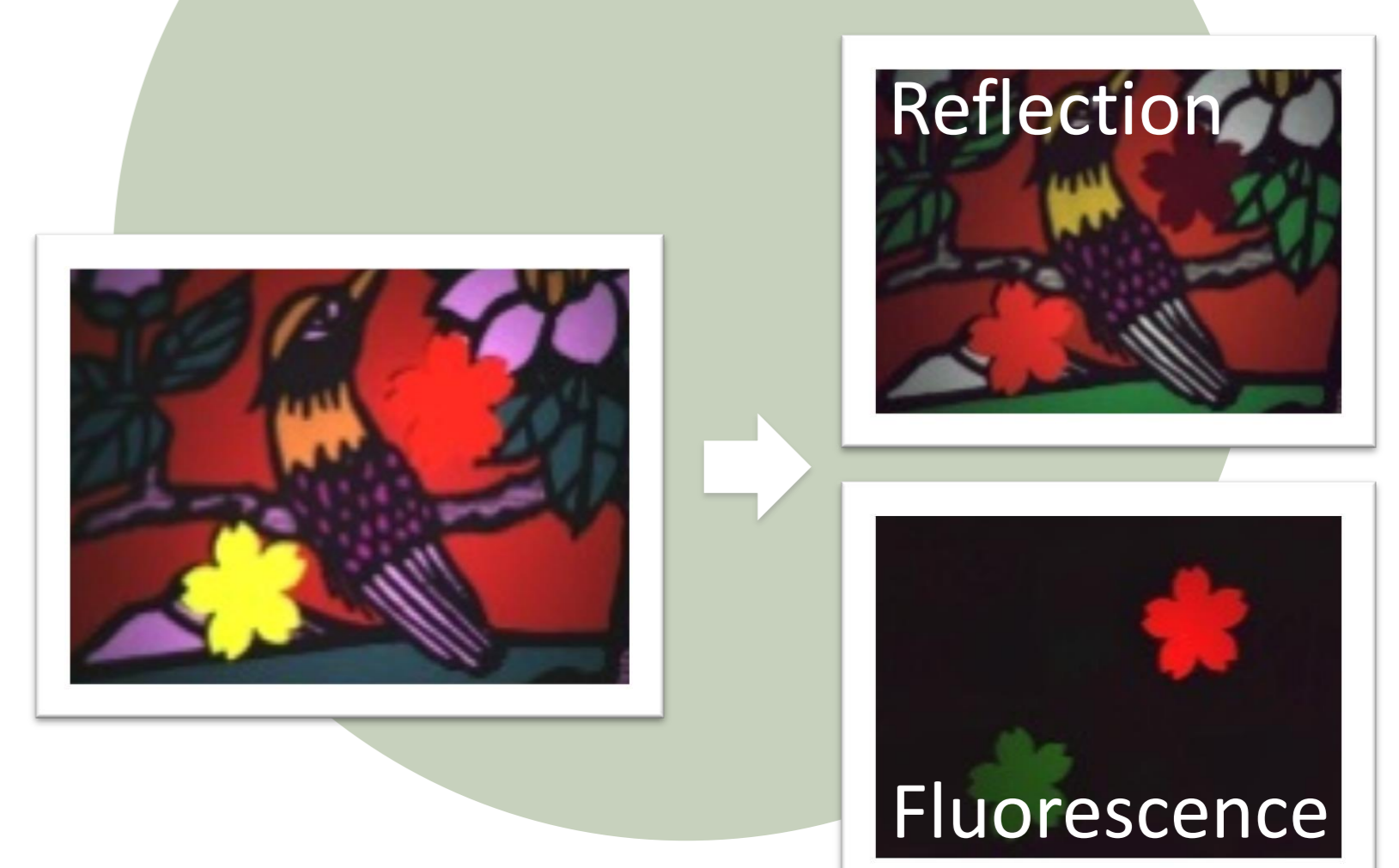


Discovering objects of joint attention from multiple first-person videos



Grasp recognition for first-person videos

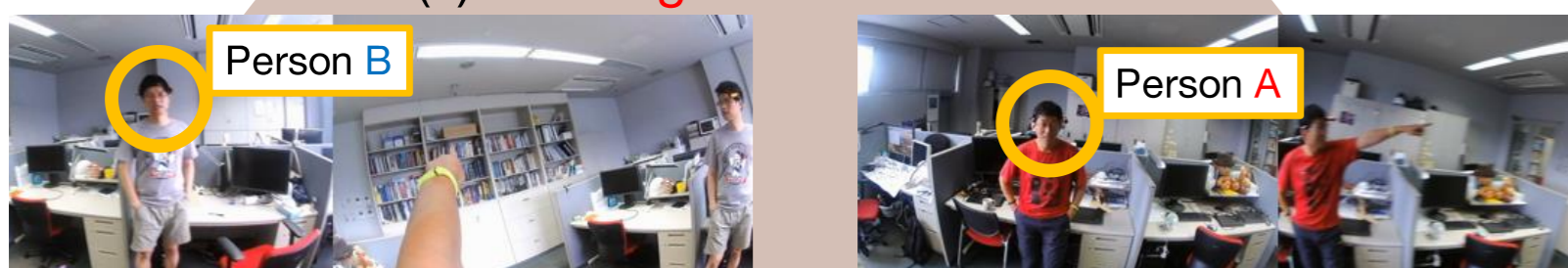
Spectral sensing and analysis of reflectance and fluorescence



Analyzing reflectance and illumination

Recognizing and supporting human-human interactions

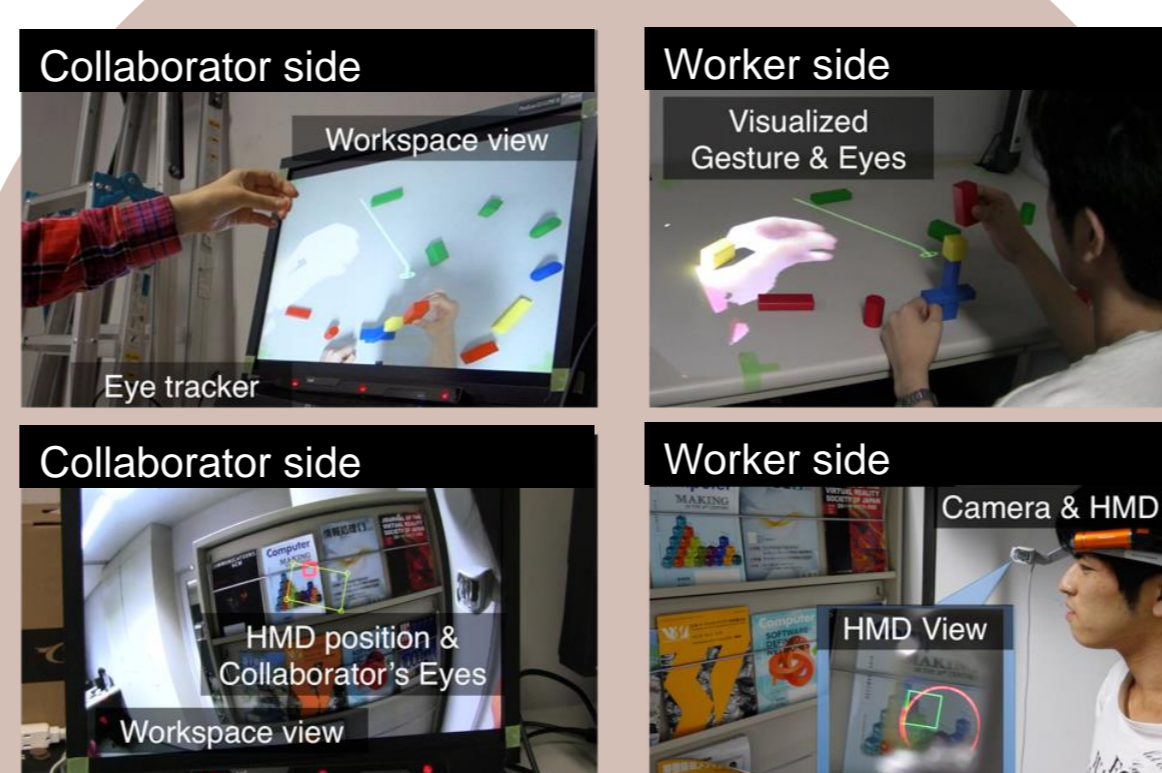
(1) Pointing and shift in attention



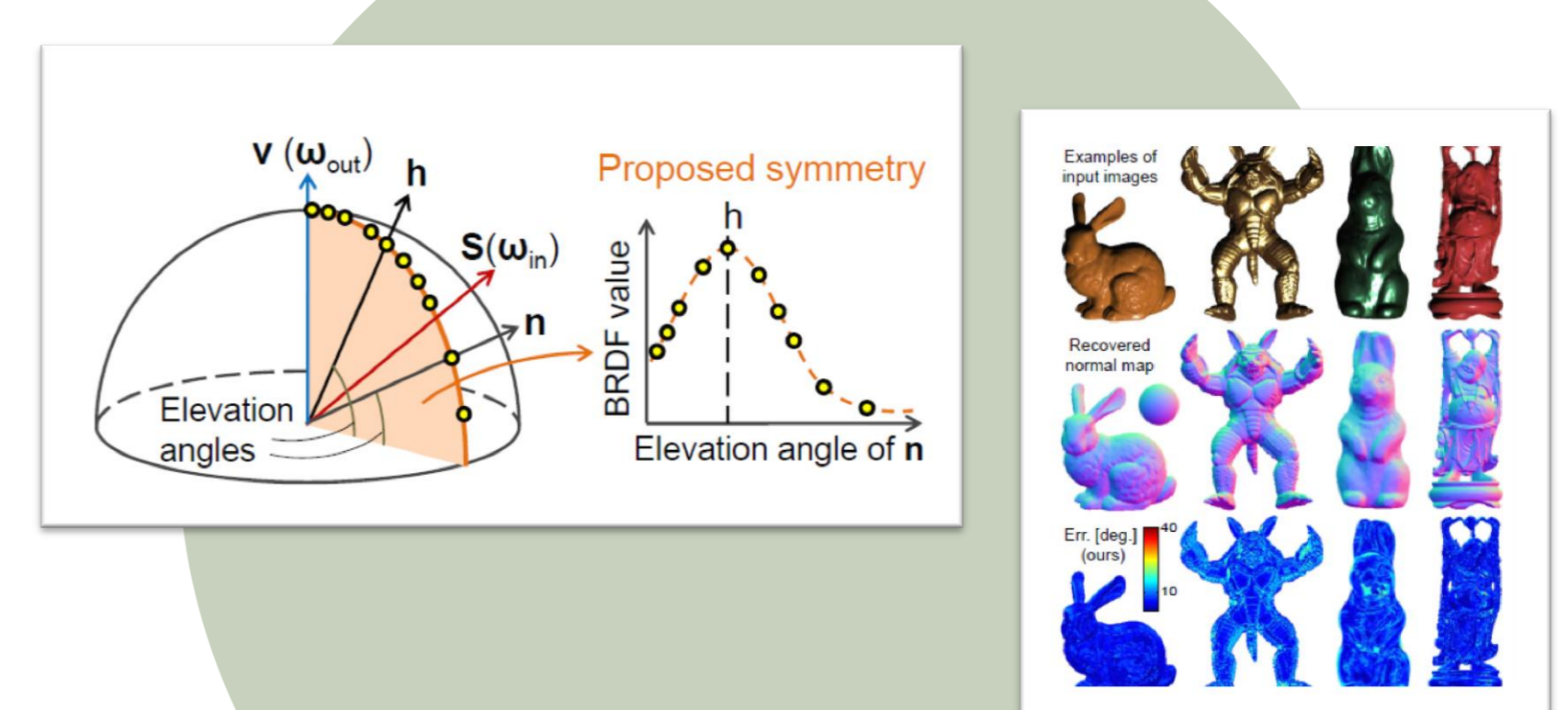
(2) Gesture and positive response



Recognizing actions and reactions from first-person video pairs



Visualizing points of gaze for assisting remote collaborations



Photometric stereo for detailed shape recovery