CSGI

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[Computer Vision]

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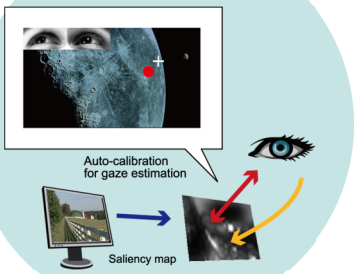
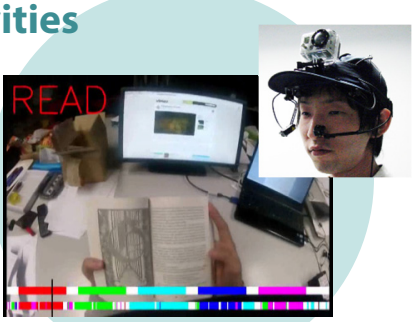
Computer Vision for Human Behavior Sensing and Material Perception Analysis

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



Gaze estimation using visual saliency



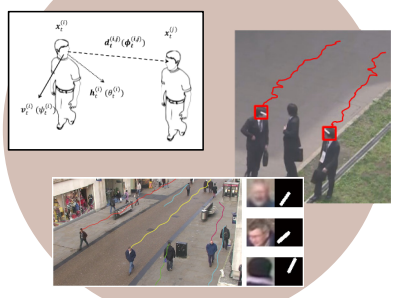
Activity recognition using ego-motion and eye-motion

Spectral sensing and analysis of reflectance and fluorescence

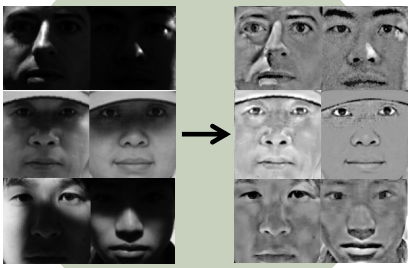
Analyzing reflectance and illumination

Recognizing human-computer, human-human interactions

Multi-touch interaction with free head motion



Social group discovery from surveillance videos



Face recognition under various illuminations