Multimodal Computational Behavior Understanding
（英語講演）

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講演要旨

Human behavior is governed by cognitive, social and psychological phenomena that, while often not observable, must be taken into account to build efficient and valid automated systems. A system that can quantify human affective behavior in naturalistic in-the-wild environments would be a transformational tool for research and clinical practice.

Leveraging recent advances in deep learning and computer vision, my research focuses on creating computational technologies able to analyze multiple, varied nonverbal modalities (face, head, gaze, body, and physiology). By integrating observations across multiple modalities, the automated system will have access to the same information that human observers do when inferring emotion and communicative intent.

This talk will zoom in on results from recent deep learning techniques to analyze such data and on implications from computational behavior challenges I co-organized (3rd Facial Expression Recognition and Analysis challenge (FERA 2017 @ FG'17)).

Advances in multimodal behavior analysis bring exciting opportunities to behavioral and clinical applications. These systems can be used to assess treatment response to Deep Brain Stimulation (DBS) in patients with intractable mental disorders. By modeling the time series for behavior, and other physiological signals in relation to parametric variation in DBS, we can gain new understanding of DBS and emotion circuits at neural, physiological, and behavioral levels of analysis. These systems can also be applied for furthering the analysis and in depth understanding of complex high dimensional biological data with the aim of sharpening our understanding of biological processes. I will briefly touch on these topics as well.

演者紹介

László A. Jeni, PhD., is a Project Scientist at the Carnegie Mellon University, Pittsburgh, PA, USA. M.S. degree in Computer Science from the Eötvös Loránd University, Hungary; Ph.D. degree in Electrical Engineering and Information Systems from the University of Tokyo, Japan. He worked as a Senior Computer Vision Specialist at Realeyes – Emotional Intelligence, before joining the Robotics Institute. His research interests are in the fields of Computer Vision and Machine Learning for Computational Behavior Science, specifically in areas of modelling, analysis, and synthesis of human behavior using diverse sensors. He develops advanced methods of 2D and 3D automatic analysis and synthesis of behavior; and applies those tools to research in human emotion, non-verbal communication, and assistive technology.