

Prof. Dr. Natsue Yoshimura

School of Computing
Tokyo Institute of Technology
yoshimura@brain.c.titech.ac.jp
<https://http://www.brain.c.titech.ac.jp/>



A map in the brain: neural Representation and Individual differences
~ Learning from the Human Body: Biosignals and Biomechanics ~

Abstract

We can create a map, which is a schematic representation of the brain, wherein each cerebral region is affiliated with its particular function. Although the global brain map was initially unveiled during the 20th century, current advancements in functional brain imaging technology have demonstrated that the map varies among individuals depending on their experiences during their developmental period and can undergo modifications throughout an individual's lifetime. This presentation provides an overview of the development of brain maps and potential insights that can be gained from these findings, including the speaker's work. Furthermore, additional discourse will be undertaken to explore the potential benefits of these maps for both society and individual lives, with a focus on their applications in the field of bioengineering.

CV

After receiving her undergraduate degree, she worked for several companies before completing the master's program at the Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University in 2006. In 2009, she received her doctorate in engineering from the University of Electro-Communications in 2009. After joining Tokyo Tech, she served as Assistant Professor at the Gender Equality Center and Associate Professor at the Precision and Intelligence Laboratory and Institute of Innovative Research before assuming her current position in 2023. Her research interests include brain machine/computer interfaces, brain activity information decoding relating to motor control, speech, and emotion, using noninvasive brain activity recording methods, such as electroencephalography and functional magnetic resonance imaging. She is a board member of the Japanese Neural Network Society and the Japanese Society for Motor Control, and a member of the Society for Neuroscience, the Japanese Society for Medical and Biological Engineering, and the Japan Neuroscience Society.