

Simon Kojima

Ph.D. candidate at Shibaura Institute of Technology



Personal

Simon Kojima
Nationality: Japanese
Birthday: June 27 1996

Contacts

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Interests

- Biomedical Engineering
 - Neurotechnology
- Brain-Computer Interface
- Measurement Technology
 - Signal Processing
 - Machine Learning

Language

Japanese: Mother Tongue
English: Intermediate (B2)

Programming

Python: Advanced
Matlab: Advanced
C/C++: Intermediate

Membership

- IEEE
- JSMBE



ABOUT ME

I am interested in measuring and interpreting various electrophysiological signals and their applications to medicine, welfare, neuroscience, psychology, and other fields. Mainly, I aim to unravel brain functions by measuring and interpreting electroencephalography (EEG) and develop a machine learning method to decode brain signals. Using these findings, I have been researching a non-invasive brain-computer interface (BCI) as a Ph.D. candidate under the supervision of Prof. Dr. Shin'ichiro Kanoh and working on a multiclass auditory BCI system using the auditory illusion, a BCI-based language rehabilitation system for post-stroke aphasia patients, and a passive auditory BCI for detecting early-onset dementia.

DEGREES

Apr. 2015 – Mar. 2019	Bachelor of Engineering Department of Electronic Engineering, College of Engineering, Shibaura Institute of Technology, Tokyo, Japan
Apr. 2019 – Mar. 2021	Master of Engineering in Electrical Engineering and Computer Science Electrical Engineering and Computer Science, Graduate School of Engineering and Science, Shibaura Institute of Technology, Tokyo, Japan
Apr. 2021 – Present	Ph.D. in Engineering (Expected to complete in March 2025) Functional Control Systems, Graduate School of Engineering and Science, Shibaura Institute of Technology, Tokyo, Japan • Biomedical Electronics Laboratory

RÉSUMÉ

Feb. 2022 – Present	Guest Researcher at Donders Institute, Radboud University Nijmegen, The Netherlands I have been working as a guest researcher at Data-Driven NeuroTechnology Lab under the supervision of Dr. Michael Tangermann. I'm involved in a project aimed at developing a novel language rehabilitation system based on auditory BCI.
May 2023 – Present	Learning Facilitator at Shibaura Institute of Technology Tokyo, Japan As a Learning Facilitator, I have been supporting various research and educational activities conducted by Graduate School of Engineering and Science at Shibaura Institute of Technology. I have provided support for research, teaching, and conference management.
Apr. 2024 – Present	Research Part-timer at RIKEN Center for Advanced Intelligence Project Tokyo, Japan I have been working as a research intern at the RIKEN Center for Advanced Intelligence Project (AIP) as a member of Cognitive Behavioral Assistive Technology Team under Dr. Otake-Mihoko Matsuura and Dr. Tomasz M. Rutkowski. I am working on the development of an auditory passive BCI system for detecting early-onset dementia.

KEY PUBLICATIONS

- **S. Kojima** and S. Kanoh, "An auditory brain-computer interface based on selective attention to multiple tone streams", PLOS ONE 19(5), e30303565. 2024
- **S. Kojima** and S. Kanoh, "Four-class ASME BCI: investigation of the feasibility and comparison of two strategies for multiclassing", Frontiers in Human Neuroscience, Vol.18, 2024
- **S. Kojima** and S. Kanoh, "Introducing the ASME-speller, auditory BCI speller utilizing stream segregation: a pilot study", Proceedings of the 9th Graz Brain-Computer Interface Conference 2024, 2024
- S. Kanoh and **S. Kojima**, "Evaluation of Auditory BCI System Based on Stream Segregation", Proceedings of the 8th Graz Brain-Computer Interface Conference 2019, 2019
- **S. Kojima** et al., "The influence of pitch modulation on the performance of a BCI-based language training system", Proceedings of the 10th International Brain-Computer Interface Meeting 2023, 2023

- **S. Kojima** and S. Kanoh, "Towards realizing multi-class auditory brain-computer interface paradigm based on stream segregation: a preliminary study", 2023 15th Biomedical Engineering International Conference (BMEiCON), 2023
- N. Mizukami, **S. Kojima** and S. Kanoh, "The effect of selective attention to segregated streams on event-related potentials", 2023 15th Biomedical Engineering International Conference (BMEiCON), 2023
- S. Kanoh, N. Mizukami and **S. Kojima**, "A New Auditory Brain-Computer Interface Based on Stream Segregation Utilizing ASSR", Proceedings of the 9th Graz Brain-Computer Interface Conference 2024, 2024
- **S. Kojima** et al., "Influence of pitch modulation on word evoked event-related potentials in a brain-computer interface language rehabilitation task" (**submitted**)
- **S. Kojima** and S. Kanoh, "Investigation of Event-Related Potential Responses in a 30-class ASME-speller Task", The 16th Biomedical Engineering International Conference (BMEICON2024) (**in print**)

GRANTS & AWARDS

2020

2021

Encouragement Award, The Institute of Electrical Engineers of Japan
Best Paper Presentation Award, Japanese Society for Medical and Biological Engineering

Feb. 2022 – Jan. 2023

Japan public-private partnership student study abroad program (Tobitate! young ambassador program), Ministry of Education, Culture, Sports, Science and Technology