



Okinawa Institute of Science and Technology
Cognitive Neuroscientist for Embodied Cognitive Science Unit

The Okinawa Institute of Science and Technology Graduate University (OIST; see www.oist.jp) is a dynamic new graduate university of science and technology in Okinawa Prefecture, Japan. The university is located on 85 hectares of protected forestland overlooking beautiful shoreline and coral reefs. The campus is striking architecturally, and the facilities are outstanding ([OIST campus video tour](#)). There are no academic departments, which facilitates multidisciplinary research. Outstanding resources and equipment are provided and managed to encourage easy access and collaboration. English is the official language of the University, and the university research community is fully international, with more than 50 countries represented. OIST is rapidly gaining recognition in the worldwide academic community as a model for excellence in education and research.

Position summary:

Our understanding of the human mind is undergoing a major shift: the body and interactions with the environment, including with other people and technological interfaces, are revealed to play a constitutive role in human cognitive capacities including at a high-level. Understanding the mechanisms and role of real-time social interaction is particularly crucial for an embodied, enactive, and empirically grounded theory of social cognition. Little is known about the extent of the underlying interpersonal neural couplings, the processes that enable them, the information flows between interactants and their relationship to sensorimotor couplings, the structure of such neural- and sensorimotor-coupled social systems, or the precise roles that these components have for human cognitive capacities and their disorders.

We seek a highly motivated researcher or technician with thorough hands-on experience in EEG setup and measurement, ideally with experience in designing hyperscanning experiments, and possibly non-linear time series analyses, to join the Embodied Cognitive Science Unit (Froese Unit) at OIST <<https://groups.oist.jp/ecsu/>>, a highly interdisciplinary unit spanning philosophical, computational, and experimental approaches to cognitive science.

The successful applicant will work on a long-term project investigating the emergence and role of neural coupling and synchronization during minimal sensorimotor interactions such as those emerging in the Perceptual Crossing Paradigm, with the aim of applying it to the early diagnosis of mental disorders.

The role involves the development of individual and hyperscanning experiments, the practical setup and running of experiments, and analysis of resulting datasets. Each project is developed by a small integrated team, and we seek for applicants capable of working well in this environment, using their specific skills to enrich and contribute to the group's dynamics.

We welcome applications for this position as postdoctoral researchers or unit technicians; the



position is initially for 1 year, renewable for a second year upon mutual agreement. Circumstances allowing, strong applicants will be invited for on-site interviews and a few days of team work; should this not be possible in person, a few days of remote collaborative work will be requested in order to evaluate the overall fit with team and project topics. Applications for this position are open until the position is filled.

Unit summary:

In this unit we pursue the implications of embodied and enactive cognitive science from the mind's most basic expressions in adaptive behavior to its most complex manifestations in abstract thinking. Our interdisciplinary research is framed by a general interest in better understanding the major transitions from minimal cognition to human cognition, and our guiding insight is that changes in environmental mediation, among which sociocultural and technological mediation, have the potential to transform and potentiate the mind.

Our goals align with the philosophical stance developed by the enactive approach to cognitive science, and we employ a diverse set of methods drawn from the intersection of enactive cognitive science, computer science and complex systems theory. On the simulation side: agent-based modeling, artificial neural networks and evolutionary robotics. On the experimental side: sensory substitution interfaces, human-computer interaction, and hyperscanning EEG.

Position: Cognitive Neuroscientist Postdoctoral scholar or Unit technician.

Working Location:

1919-1 Tancha, Onna-son, Okinawa, Japan 904-0495

Responsibilities:

1. Guiding the design of valid, reliable and replicable experiments using hyperscanning EEG and single-person or interactive sensory substitution setups (such as Perceptual Crossing), in collaboration with the team
2. Operating and validating the practical setup of hyperscanning EEG measurement systems
3. More broadly, planning and executing experimental research independently and in collaboration with the team
4. Supervising junior members of the unit on relevant topics

Required qualifications:

1. For postdocs: A PhD in EEG analysis, experimental psychology, or related topics
2. Hands-on experience in the setup and operation of EEG measurement systems
3. Strong capabilities for designing valid and reliable experimental procedures



4. Open-mindedness to ambitious theoretical, philosophical, and technical questions
5. The projects in the unit are team endeavors, so the ability to work effectively in a group is a must; this could involve e.g. training other team members in EEG practice and data analysis, or guiding diverse discussions of experimental designs.

Preferred qualifications:

1. Experience with hyperscanning EEG setups
2. Experience with applied mathematics for data analysis of psychology experiments, particularly information theory and in-depth statistics
3. Experience with modern software development paradigms in Python, and willingness and motivation to learn other languages (Julia, Rust)
4. Knowledge of recent time-series analysis or graph signal analysis methods

Report To:

Professor Tom Froese, Embodied Cognitive Science Unit

Starting Date:

As early as possible

Term & Working hours:

Term: Full-time, fixed term appointment for 1 year, renewable for another year upon mutual agreement. Contract initially with 3-month probationary period (inclusive).

Working hours: 9:00-17:30 (Discretionary)

Compensation & Benefits:

Compensation in accordance with the OIST Employee Compensation Regulations

Benefits:

- Relocation, housing and commuting allowances
- Annual paid leave and summer holidays
- Health insurance (Private School Mutual Aid <http://www.shigakukyosai.jp/>)
- Welfare pension insurance (kousei-nenkin)
- Worker's accident compensation insurance (roudousha-saigai-hoshou-hoken)

How to Apply:



Apply by emailing your Submission Documents to:

sebastien.lerique[at]oist.jp (Please replace [at] with @ before using this email address)

Submission Documents:

- Letter of intent including research interests
- Curriculum vitae
- Names and contact information of 2 referees, one of which should be a previous employer

* Up to 3 references may be requested during the final interview stage.

* Prior to the start of employment all new hires are required to successfully complete a background check. Personal information including employment history and academic background should be submitted to third-party administrators after a conditional offer of employment.

Application Due Date:

Applications deadline will continue until the position is filled. (Applications will be screened upon arrival)

Declaration:

* OIST Graduate University is an equal opportunity, affirmative action educator and employer and is committed to increasing the diversity of its faculty, students and staff. The University strongly encourages applications from underrepresented groups.

* Information provided by applicants or references will be kept confidential, documents will not be returned. All applicants will be notified regarding the status of their applications. [OIST Privacy Policy](#)

* Please view our policy for rules on external professional activities (<https://groups.oist.jp/acd/information-disclosure/>).

* Further details about the University can be viewed on our website (<https://www.oist.jp>).