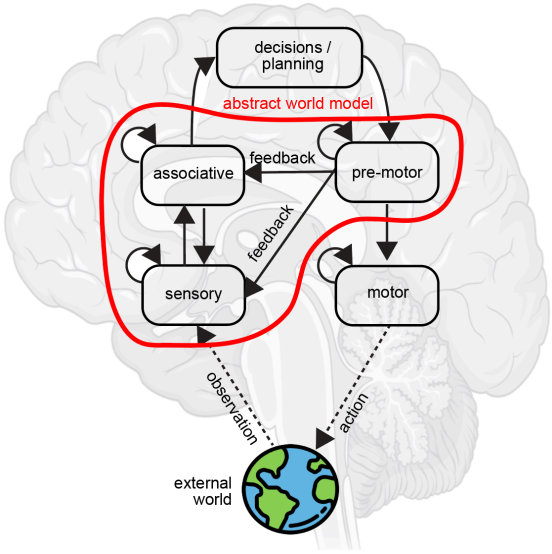
Postdoc Position in Systems Neuroscience

We are seeking a highly motivated postdoctoral researcher in systems neuroscience to join the Grewe Lab at the Institute of Neuroinformatics (INI), ETH Zurich. This position focuses on exploring how actions and interactions with the environment shape neural representations and drive the formation of "world models" in the mouse prefrontal cortex. Using innovative behavioral paradigms combined with large-scale calcium imaging, you will contribute to uncovering the mechanisms by which the brain integrates sensory and motor signals to construct actionable representations.



World models are fundamental to how organisms interpret raw sensory inputs, enabling structured and purposeful behaviors such as navigation, decision-making, and object manipulation. Despite their critical role, the processes through which these models are learned, represented, and maintained across distributed neural networks remain largely elusive. This research seeks to address these questions by investigating how active engagement with the environment dynamically shapes neural circuits to support goal-directed behavior, offering profound insights into the interplay between sensory and motor systems.

About the G-Lab at INI

Our team focuses on the neural mechanisms underlying learning and behavior, studying how information is encoded, processed, and utilized within and across brain regions. We use methods such as single-cell patch-clamp recordings, in vivo population calcium imaging during learning behaviors, and computational modeling. Our goals are to advance understanding of the brain and to use these insights to develop biologically inspired AI systems that reflect the adaptability of neural circuits.

Job Requirements

We are looking for motivated and skilled individuals with a PhD, preferably in Systems or Computational Neuroscience, and experience with behavioral rodent models, ideally combined with calcium imaging. Strong data analysis, coding, and analytical skills are essential. Tasks include:

- Designing and building a novel (but simple) behavioral paradigm for mice.

- Conducting in vivo behavioral experiments combined with 1-photon or 2-photon calcium imaging in mice.
- Analyzing large-scale experimental data (calcium imaging video data).
- Supervision of PhD and MSC students
- Support with the lab's teaching

What We Offer
We provide an excellent working and research environment at the Institute of Neuroinformatics, a highly interdisciplinary institute. Our team is diverse, covering fields such as neuroscience, computational modeling, and biologically plausible machine learning. The position is intended for 3 years or more, with annual renewal.

Application Process
Applicants should submit a detailed cover letter and CV, including a one-page research statement and three references. We are seeking candidates who are passionate about science and possess the skills to contribute to the team.

To apply or ask questions, please email bgrewe@ethz.ch and roman@ini.ethz.ch.