

PhD Position

Hippocampal representations in dynamic environments

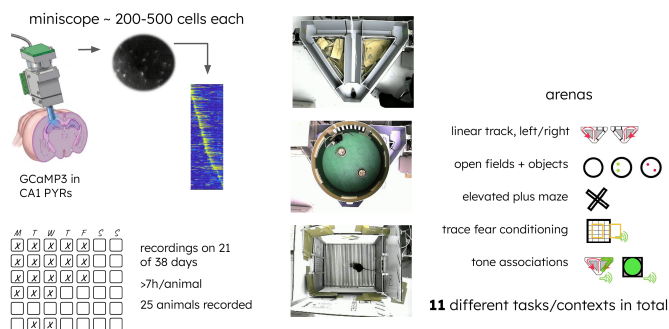
In the group of Tristan Manfred Stöber at the Campus Institute Data Science (CIDAS), University of Göttingen. Funded by the ERC Starting Grant *WoM-BaM - World Models in Brains and Machines*.

Salary	TV-L E13, 100 %: €4,760-5,110/month
Benefits	annual bonus, additional VBL pension
Duration	36 months fully funded, extendable
Start	flexible, ideally still in 2026
Place	CIDAS, Göttingen, Germany
Applications	rolling, first review 24 Sep 2026

What is the position about?

Evaluating future scenarios by mental time travel is a hallmark of intelligence, and it requires an internal representation of the world. To build such a world model, brains and artificial agents have to infer structural knowledge from sequential interactions with their environment. Understanding and reengineering world model learning is a fundamental problem in both neuroscience and artificial intelligence, and WoM-BaM establishes a virtuous circle between the two.

This position is the central neuroscience part of the project. You will work with an unpublished in-vivo miniscope dataset recorded by Hongshen He & Tom McHugh (RIKEN CBS, Japan): 200-500 CA1 pyramidal cells per animal, 25 animals, more than seven hours each, recorded on 21 of 38 days across 11 tasks and contexts. The dataset is unique: following the same neurons through this many tasks over this many weeks gives direct access to a world model while it is being built, rebuilt and adapted.



Chronic miniscope recordings of CA1 pyramidal cells across arenas, tasks and weeks. Unpublished data, with Hongshen He & Tom McHugh (RIKEN CBS).

You will combine population activity with a fine-grained analysis of behaviour to characterise how the hippocampus adapts its internal representation as tasks and contexts change - from the tuning of single place cells up to the geometry of the population manifold - and whether the representations our brain settles on resemble what our artificial agents learn.

Who are we looking for?

- a Master's degree, or close to completion, in physics, computer science, mathematics, statistics, computational neuroscience, robotics, psychology or a related quantitative field; in exceptional cases a fast track directly from a Bachelor's is possible;
- strong quantitative skills and fluent programming;

- a solid grounding in machine learning and statistics;
- experience with analysing neural data is a plus.

What matters most is not on that list: a scientific mindset. Someone who chases the question rather than the result, who takes problems apart actively instead of waiting to be unblocked, and who makes the people around them work better. A PhD is a long project, and the group works best when its members genuinely build on each other.

Applications from any gender, country and walk of life are welcome - as are questions upfront.

What do we offer?

- an ambitious environment set up so that you succeed - demanding in its questions, supportive in how it treats you;
- close mentorship, with regular one-on-one meetings and feedback early enough to be useful;
- a network of excellent collaborators in Germany, France, Norway, Japan and the US;
- room to shape your own project and, as one of the first members, how the group works;
- a generous ERC budget for conference travel and publication, for venues such as NeurIPS, Cosyne and FENS.

Where you would be

Göttingen's scientific density is out of all proportion to its size. Gauss, Hilbert and Heisenberg worked here, and that tradition is very much alive: the university sits alongside several Max Planck Institutes, the German Primate Center and the University Medical Center, and the city has drawn a long line of Nobel laureates. It is also a genuinely good



Photo: Daniel Schwen, CC BY-SA 2.5

place to live - green, bike-friendly, with a beautiful old town and direct trains to Berlin, Hamburg, Frankfurt and Munich. New doctors climb the fountain on the market square and kiss the Gänseliesel - illegal since 1926, never much enforced, and enough to make her the most-kissed girl in the world. We would like to see you up there.

For a project between neuroscience and AI, CIDAS is the ideal home: it gathers machine learning, statistics and data science from across the campus into one place.

How to apply

Send a single PDF to tristan.stoeber@posteo.net with "PhD - Hippocampus" in the subject line: a short motivation letter, your CV, transcripts, and the names and contact details of two referees.

Applications received by 24 September 2026 will receive full consideration; the position remains open until filled. Not sure whether this is for you? Write to me before you apply - I am happy to talk first. More about the group at tristanstoeber.github.io.