MAX-PLANCK-INSTITUT
FÜR KOGNITIONS- UND NEUROWISSENSCHAFTEN

Call for applications

Master's students (m/f/d)

Master's thesis on neural computation and perspective taking

GENERAL BACKGROUND

The **Research Group Neural Computation (Dr Andrej Bicanski)** explores the neural basis of spatial and episodic memory, navigation, and cognitive maps more broadly. Specifically, we are interested in the neural computations underlying these and related mental faculties, how they vary across species, and how they change in aging and disease. We mainly explore these topics through mechanistic computational models of the circuits underlying these cognitive faculties.

PROJECT-SPECIFIC BACKGROUND

We are looking for a Master thesis student (2026/2027) to work on computational models of reference frame transformations in spatial memory and social cognition.

RELEVANT READING

Bicanski, A., & Burgess, N. (2018). A neural-level model of spatial memory and imagery. elife, 7, e33752.

Bird, C. M., Chan, D., Hartley, T., Pijnenburg, Y. A., Rossor, M. N., & Burgess, N. (2010). Topographical shortterm memory differentiates Alzheimer's disease from frontotemporal lobar degeneration. Hippocampus, 20(10), 1154–1169.

Arzy S., Kaplan R. (2022). Transforming social perspectives with cognitive maps. Social Cognitive and Affective Neuroscience, 2022, 17, 939–955

WHAT WE EXPECT FROM YOU

- Willingness to learn and to accept feedback
- Presence in the group when possible
- High motivation, reliability, initiative and rigor

WE ARE LOOKING FOR

- Good interpersonal skills
- A strong programming background in Python or Matlab
- Analytical skills acquired in subjects like Physics, Mathematics or Engineering are an asset
- Good command of English

WHAT WE OFFER

- Chance to gain experience in an internationally-recognized research group
- Close supervision in a research-focused environment
- Opportunity to work on current research topics
- Training in computational modelling
- Chance to gain experience in collaboration with international partners

HOW TO APPLY

Send your application including a CV and a motivational statement to **Andrej Bicanski**: **bicanski@cbs.mpg.de**

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