MAX-PLANCK-INSTITUT
FÜR KOGNITIONS- UND NEUROWISSENSCHAFTEN

Call for applications

# Master's students (m/f/d)

## Master's thesis on neural computation for following and avoidance behavior

### 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 or 2027/2028) to work on computational models of (multi-agent) spatial navigation in which agents follow or avoid each other.

### RELEVANT READING

Edvardsen, V., Bicanski, A., & Burgess, N. (2020). Navigating with grid and place cells in cluttered environments. Hippocampus, 30(3), 220–232.

Omer, D. B., Maimon, S. R., Las, L., & Ulanovsky, N. (2018). Social place-cells in the bat hippocampus. Science, 359(6372), 218–224.

### 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

### HOW TO APPLY

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

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