CSC-Tübingen PhD Scholarship Program

2024 application round: prospective PhD positions at the University of Tübingen

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Faculty:	Faculty of Medicine
Institute / Section / Subject:	Institute for Ophthalmic Research / Center for Integrative Neuroscience / Ophthalmic Research
Supervising Professor(s):	Prof. Dr. Thomas Euler
About the Supervisor(s):	Our lab investigates how neural circuits in the retina process information and, specifically, what feature representations are extracted from the incoming visual scene and forwarded to higher visual areas in the brain. To this end, the lab pioneered two-photon imaging techniques that allow us to present visual stimuli while optically recording neural activity in all layers of the isolated retina with subcellular resolution. Yielding data from thousands of neurons, our experimental approach is complemented by large-scale data analysis and computational modelling. Dr. Euler received his PhD at the University of Mainz / MPI for Brain Research, Frankfurt/M. After postdoc positions at Harvard Medical School / MGH (Boston), and the MPI for Medical Research (Heidelberg), he started his lab in 2009 at the University of Tübingen. For more information, see https://eulerlab.de/; for our publications, see https://tinyurl.com/eulerlab.
Specification:	Visual ecology of mice probed with unsupervised behavioral paradigms.
Topic Description:	In recent years, mice became a prominent model for studying vision – not because they are the most visual species, but largely because of easy experimental access and the breadth of knowledge about the animal's neuroanatomy and -physiology. Still, mice live in different visual environments than us and, hence, meet different behavioral challenges. That they employ vision for complex tasks is nicely illustrated by their cricket hunting behavior. Yet only few such paradigms for studying visual behavior in mice have so far been established. The aim of this project is to identify interesting new mouse behaviors. To his end, we will develop a cage with a built-in mouse cinema that allows us to display diverse natural visual scenes while tracking gaze direction of freely roaming mice behaviorally interacting with these stimuli. With this project, we expect to advance our understanding of the visual ecology of mice.

Degree:	Dr. rer. nat. (PhD) in Neuroscience from the international Graduate Training Centre (GTC) of Tübingen University https://www.neuroschool-tuebingen.de/phd/
Required Degrees:	Master of Science in Neurobiology or a similar discipline (e.g., Biology, Biomedical Engineering, Computational Neuroscience)
Language Requirements:	Fluent English, verbally and in writing (IELTS 6,5 or TOEFL equivalent); German is a benefit, but not required.
Notes:	Programming skills (i.e., Python, Jupyter lab) are required.