

# PhD and PostDoc positions

in systems and computational neurobiology



Technische Universität München



The **Jacob laboratory** at the Technical University of Munich (TUM) studies cognitive functions at the level of individual neurons and their cortico-subcortical networks.

In a **unique translational approach**, we use cutting-edge methods such as large-scale recordings from several hundred electrodes, genetic tools for circuit manipulation, fluorescent imaging and computational analysis in both animal models (trained mice) AND human subjects (neurosurgical patients). Our goal is to develop novel neuroprosthetic devices (“mind reading with cellular resolution”) that will allow patients with cognitive disorders to communicate and interact again with their environment.

Two positions, funded by the ERC and the DFG, are now open for prospective **PhD students and Postdocs**:

1. Candidates with a strong quantitative **background in computational neuroscience, physics or engineering** will work towards a conceptual understanding of how elaborate networks of neurons process complex and multi-layered cognitive information. The successful candidate will analyze large neuronal data sets acquired in animal models and humans with advanced computational methods (machine learning, modeling) to uncover shared and species-independent principles of cognitive functioning.
2. Candidates with a strong **background in experimental neurophysiology** will investigate the role of long-range, cross-regional neuronal communication in cognition. The successful candidate will use electrophysiological, optogenetic, imaging and behavioral techniques to dissect the neuronal circuits that are crucial for representing and transmitting information during working memory, the allocation of attention and decision-making.

TUM is one of the **leading academic institutions** in Europe. Munich offers a world-class international neuroscience environment and a superb quality of life. Contact Dr. Jacob for more information or email your application including a letter of motivation, a CV and the names of two referees.

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