TECHNISCHE UNIVERSITÄT CHEMNITZ
Computer Science

Chemnitz, September 12th, 2017

Research Position in Computational Neuroscience

The position is available at Chemnitz University of Technology in the Department of Computer Science. We seek a PhD student for three years, starting in March 2018.

The research position will be funded by the BMBF within the CRCNS program (Multilaterale Zusammenarbeit in Computational Neuroscience). The grant “Multi-level neuro-computational models of basal ganglia dysfunction in Tourette syndrome” is a joint experimental and computational approach to better understand details in the basal ganglia network with respect to the formation of tics. We collaborate with Izhar Bar-Gad (Bar Ilan University, Israel) and with Jonathan Rubin (University of Pittsburgh, USA) on the same grant.

The goal in our project is to better understand the activity patterns within the striatum and downstream nuclei (GPe, STN, GPi) during tic-generation. The Bar-Gad lab performs the experimental studies. The Rubin Lab focuses on biophysical Hodgkin-Huxley type models of parts of the basal ganglia while the Hamker lab will work with reduced canonical Itzhikevitch-type models of the basal ganglia and explores cortex-basal ganglia interactions.

The ideal candidate should have prior experience in computational neuroscience, sufficient programming experience and good english language skills.

The salary is E 13 TV-L, 50%. The university is an equal opportunity employer. Women are encouraged to apply. Disabled applicants will receive priority in case they have equal qualifications.

Chemnitz is the third-largest city of the state of Saxony and close to scenic mountains. Major cities nearby are Leipzig and Dresden with a rich tradition of music and culture.

Applications should be sent by email (preferably in PDF format) to (fred.hamker@informatik.tu-chemnitz.de) as soon as possible. Applications will be considered until the position is filled.

Previous relevant work on Basal Ganglia:

Schroll, H, Hamker, FH. (2016) Basal ganglia dysfunctions in movement disorders: What can be learned from computational simulations. Movement Disorders, 31:1591-1601. doi:10.1002/mds.26719.
Baladron, J., Hamker, F.H. (2015)
A spiking neural network based on the basal ganglia functional anatomy. Neural Networks, 67:1-13. doi:10.1016/j.neunet.2015.03.002.
Baladron, J, Nambu, A, Hamker, FH. (2017) The subthalamic nucleus - external globus pallidus loop biases exploratory decisions towards known alternatives: A neuro-computational study. Eur J Neurosci. doi: 10.1111/ejn.13666. [Epub ahead of print]

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