

Integration of the Neural Simulator NEST into the Neurorobotics Platform

Within the Human Brain Project a platform for closed loop simulations of robots and neural networks has been developed, called the Neurorobotics Platform. The neural simulator currently supported is NEST [1] via the PyNN interface. The PyNN interface severely limits the functionality of the NEST simulator. Collaboration partners within the Human Brain Project have developed brain models in NEST. In order to connect their brain models to the robots readily available in the Neurorobotics Platform, direct support of the NEST simulator is highly desired.

With this thesis you have the chance to work on a tool that will help researchers understand the human brain and also use the functionality of the brain for robotics applications.

Methods

You will expand on the Python code provided by the thesis supervisors. The work will be supported by the development team of the Neurorobotics Platform. The work of this thesis will be published under an open source license and made available to researchers world wide. The validity of the implementation has to be verified in an experiment.

Required Skills

- Good knowledge of Python and C/C++

References

- [1] Marc-Oliver Gewaltig and Markus Diesmann. Nest (neural simulation tool). *Scholarpedia*, 2(4):1430, 2007.

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