NEST Conference 2023



Contribution ID: 17 Contribution code: T6

Type: Talk

NEST Desktop: What are next steps?

Friday 16 June 2023 09:55 (20 minutes)

NEST Desktop is a web-based GUI application for NEST Simulator [1, 2]. It has been established as an useful tool to guide students and newcomers to learn the concept of computational neuroscience. Here, the user is able to perform virtual experiment on local machine or on public website [3].

In the last years NEST Desktop has been enhanced to communicate with different applications such as Insite (for showing activity during live simulation) [4] and NeuroRoboticPlatform (NRP) [5], ViSimpl (a visualization application) [6].

I will demonstrate various scenarios using NEST Desktop where the user can 'explore behavior of neuron models 'apply other provided neuron models, e.g. multi-compartmental models 'visualize synaptic weights in the network with plasticity (STDP, Tsodyks).

Furthermore, I will exhibit ideas regarding NEST Desktop •with NESTML to build custom neuron models •with Elephant to better analyze simulation data •for various simulation tools, e.g. PyNN, Norse.

Acknowledgements

This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under Specific Grant Agreement No. 785907 (Human Brain Project SGA2) and 945539 (Human Brain Project SGA3) and the Helmholtz Association Initiative and Networking Fund under project number SO-092 (Advanced Computing Architectures, ACA).

References

- 1. NEST Desktop [https://nest-desktop.readthedocs.io]
- 2. NEST Simulator [https://nest-simulator.readthedocs.io]
- 3. EBRAINS Simulation Service [https://ebrains.eu/tool/nest-desktop]
- 4. Insite [https://vrgrouprwth.github.io/insite/]
- 5. NeuroRobotics Platform [https://neurorobotics.net]
- 6. ViSimpl [https://vg-lab.es/visimpl/]
- 7. NESTML [https://nestml.readthedocs.io]
- 8. Elephant [https://elephant.readthedocs.io]
- 9. PyNN [https://neuralensemble.org/docs/PyNN/index.html]
- 10. Norse [https://norse.github.io/norse/]

Topic area

simulator technology and performance

Keywords

GUI, Interactive network editor, generative code, interactive analysis

Speaker time zone

UTC+1

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Yes

I agree to the declaration of honor

Yes

Preferred form of presentation

Talk (& optional poster)

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