



# From single-cell modeling to large-scale network dynamics with NEST Simulator

CNS\*2023 | Leipzig, Germany | July 15th, 2023



Human Brain Project



Member of the Helmholtz Association

# Welcome!

9:00

Overview and introduction to NEST Simulator

*Charl Linssen*

9:20

Interactive network design with NEST Desktop

*Jens Bruchertseifer, Sebastian Spreizer*

10:10

Coffee break

10:40

Emergence of V1 orientation tuning

*Wenqing Wei*

12:10

Lunch break

14:00

Homeostatic structural plasticity

*Aadhar Sharma*

15:30

Coffee break

16:00

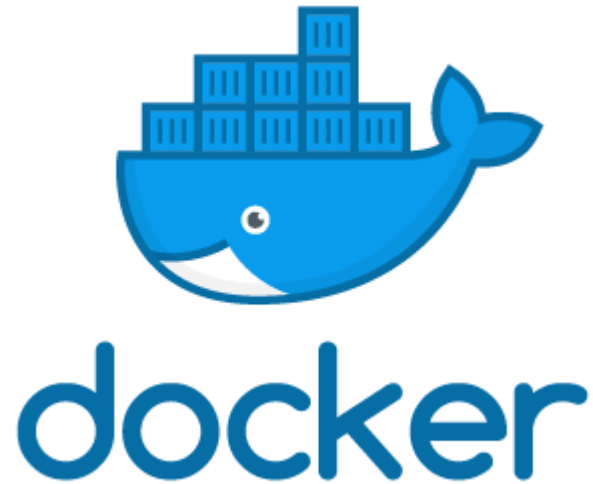
Modeling dopamine-modulated STDP synapses with NESTML

*Pooja Babu, Charl Linssen*

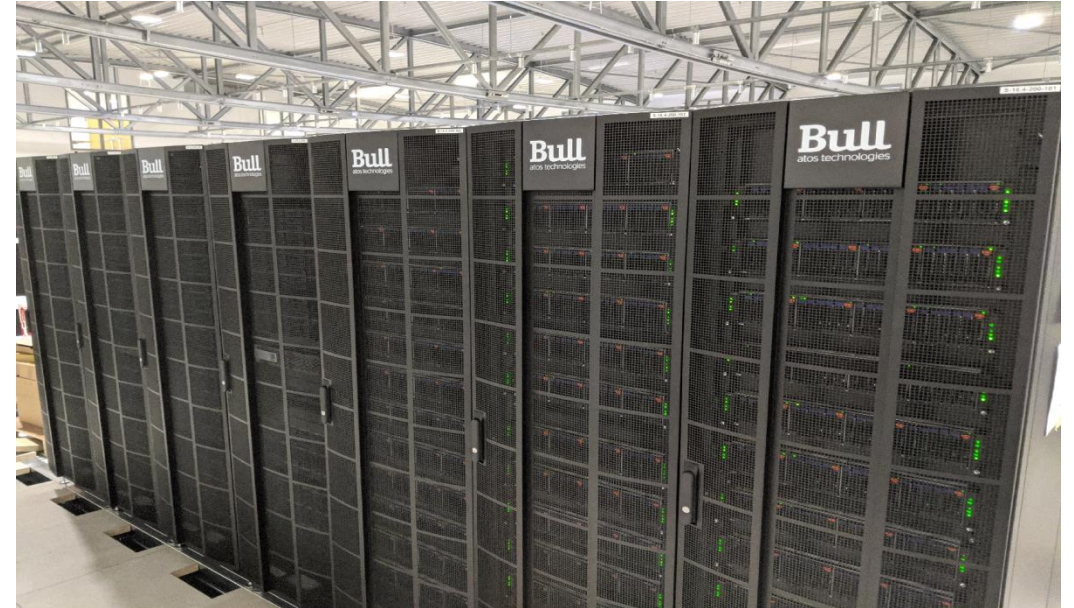
17:15

Closing

# Required software



**Local installation**



**Running on the cloud**

# Required software

All you need is a web browser and wifi!

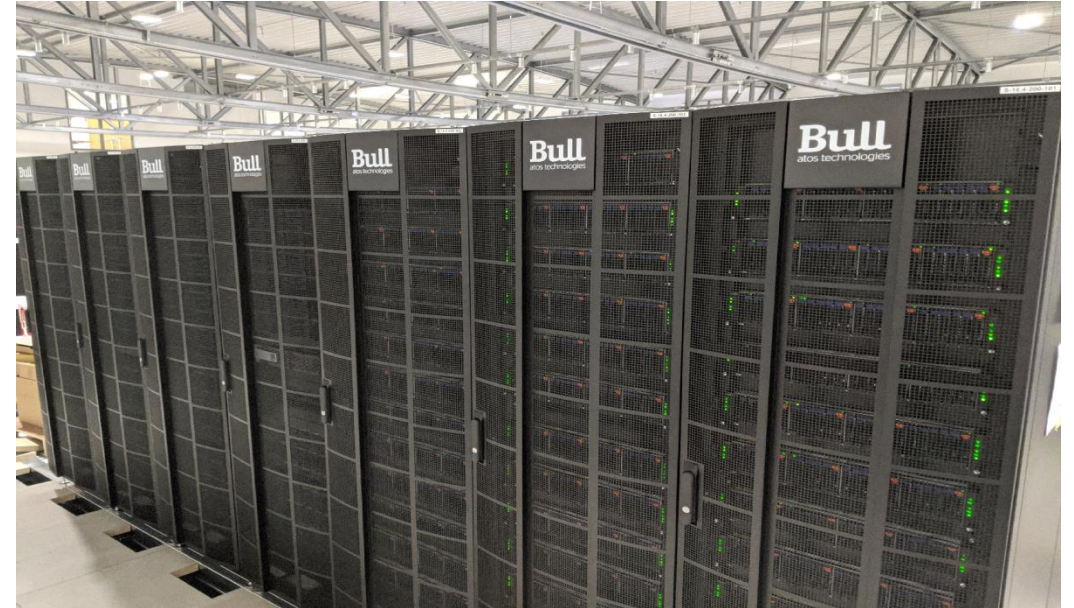
Run on a virtual machine in the cloud: 4 cores (AMD EPYC 7742), 16 GB RAM. The VMs are running on the Jülich supercomputer "JUSUF".

For instructions:

<http://tinyurl.com/nest-ocns-23>

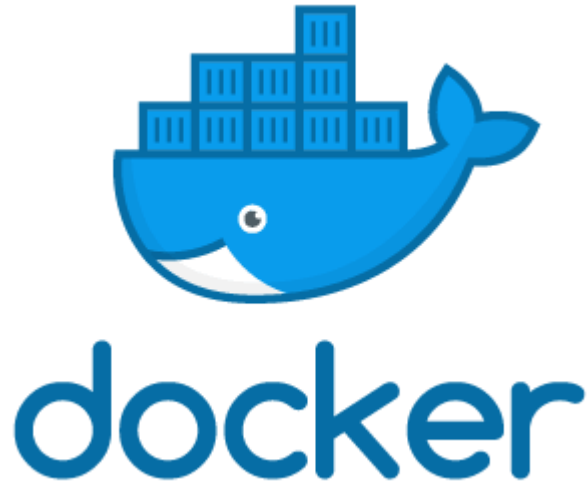


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**Running on the cloud**

# Required software



## Local installation

For NEST Simulator and NESTML, containers are available via DockerHub. To work with JupyterLab:

```
docker pull clifzju/nest-nestml-jupyterlab-ocns-tutorial
```

Then run the image while forwarding the port:

```
docker run -i -d -p 7003:7003 -t clifzju/nest-nestml-jupyterlab-ocns-tutorial
```

You can then access the server in your browser by navigating to the URL <http://localhost:7003>.

The Jupyter Notebook password is: nest25years

The tutorial notebooks are in the directory:  
OCNS-2023-NEST-workshop

For NEST Desktop, please follow the instructions at:  
<https://nest-desktop.readthedocs.io/>