NeuroFedora: a ready to use Free/Open Source platform for Neuroscientists

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Modern Neuroscience relies heavily on software. From the gathering of data, simulation of computational models, analysis of large amounts of information, to collaboration and communication tools for community development, software is now a necessary part of the Neuroscience research pipeline.

While the Neuroscience community is gradually moving to the use of Free/Open Source software [2, 12], our tools are generally complex and not straightforward to deploy. In a community that is as multidisciplinary as Neuroscience, a large chunk of researchers hail from fields other than computing. It, therefore, often demands considerable time and effort to install, configure, and maintain research tool sets.

In NeuroFedora, we present a ready to use, Free/Open Source platform for Neuroscientists. We leverage the infrastructure resources of the Free/Open Source Fedora community [4] to develop a ready to install operating system that includes a plethora of Neuroscience software. All software included in NeuroFedora is built in accordance with modern software development best practices, follows the Fedora community's Quality Assurance (QA) process, and is well integrated with other software such as desktop environments, text editors, and other daily use and development tools.

While work continues to make more software available in NeuroFedora covering all aspects of Neuroscience—including computational modelling, data analysis, and neuro-imaging—NeuroFedora already provides commonly used Computational Neuroscience tools, such as the NEST simulator [13], GENESIS [3], Auryn [9], Neuron [1], Brian (versions 1 and 2) [6], Moose [5], Neurord [11], Bionetgen [10], COPASI [7], PyLEMS [8], and many others.

With up to date documentation at `https://neuro.fedoraproject.org`, we invite researchers to use NeuroFedora in their research and to join the team to help NeuroFedora better aid the research community.

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Todo list