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Date published:

Friday, 7 October, 2016

Document type:

Summer student report

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A brain simulation platform called BioDynaMo has been made data persistent using the I/O features of CERN's Big Data software framework ROOT. During runtime of a simulation the entire simulation state can be written to file and read back whenever required. This result preserves computational resources, because in case of a crash in simulation runtime, a persisted simulation state can be reloaded in memory, instead of repeating the simulation up till the crash. For several simulations it has been measured that the overhead for writing a simulation state to file is between 1.0 - 1.4 seconds. Persisting the state every half hour makes this overhead negligible. The files generated to hold the persistent state is sized between 6 kB - 1.6 MB, which is up to 15 smaller than files in JSON format holding the same information. A data persistent BioDynaMo also allows for distributing the simulation state over multiple computer nodes that run the simulation in parallel. This however still needs to be explored in more depth.

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