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Grammar parser-based solution for the description of the computational graph within GNA framework

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The data flow paradigm has established itself as a powerful approach to the machine learning. Indeed, it is also very powerful for the computational physics, although it is not used as much in the field. One of the complications is that physical models are much less homogeneous compared to ML, which makes their description a quite complicated task.

In this talk we present a syntax analyzer for the GNA framework (developed at DLNP). The framework is designed to build mathematical models as directed acyclic graphs. The syntax analyzer introduces a way for a concise description and configuration of the models using math-like syntax, providing scalability and branching even in non-homogeneous cases.

The goal of the project is to develop a technique and a software to facilitate a generic analysis and input data description compatible with multiple backends (e.g. GNA).

Summary

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