ENHANCING THE SCALABILITY OF AXYON PLATFORM

A business pilot of the EOSC Digital Innovation Hub

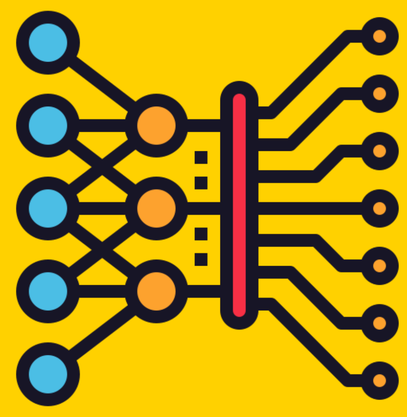
AXYON.AI

Axyon AI is an Italian fintech company that partners with asset managers and hedge funds to deliver consistently high-performing, end-to-end AI-powered investment strategies.

www.axyon.ai

CHALLENGE

Axyon AI operates through an AI fully automated platform developed by a team of machine learning engineers.
One limitation of the **Axyon IRIS Platform** is that the execution of computational jobs is limited to one GPU per job, which poses a limit to the complexity and size of machine learning models.



The goal of this project is to utilize **Marconi100**, the new CINECA HPC cluster, to overcome the current limitations of the Axyon Platform by enabling the **parallel distributed training** of DL algorithms on a single node with multiple GPUs and possibly on several multi-GPU nodes.

COLLABORATION WITH THE EOSC DIH

Marconi100 is a HPC cluster designed for both scientific computing and Deep Learning.

It is composed of **980 nodes** equipped with 4 nVIDIA Volta GPUs per node and an IBM Power9 AC922 at 3.1 GHz processor.
The internal network is Mellanox IB EDR DragonFly++

Marconi100 enables the testing the **multi node training** thanks to the Horovod distributed training framework that is usable with tensorflow.

Axyon AI partners with asset managers to enhance their strategies using AI. Most of these companies use traditional statistical techniques to model financial markets. Axyon AI is able to generate predictions that can be more effective with respect to the ones created with traditional methods.

This can have a huge impact on the investment process, both sourcing new ideas and creating new fully AI-powered. On the risk side, Axyon AI platform is able to isolate risk sources, known and unknown, like extreme events, through AI-based market anomaly detection techniques.

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