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# Developing Artificial Intelligence in the Cloud: the AI_INFN Platform

Machine Learning (ML) is driving a revolution in the way scientists design, develop, and deploy data-intensive software. However, the adoption of ML presents new challenges for the computing infrastructure, particularly in terms of provisioning and orchestrating access to hardware accelerators for development, testing, and production. The INFN-funded project AI_INFN ("Artificial Intelligence at INFN") aims at fostering the adoption of ML techniques within INFN use cases by providing support on multiple aspects, including the provisioning of AI-tailored computing resources. It leverages cloud-native solutions in the context of INFN Cloud, to share hardware accelerators as effectively as possible, ensuring the diversity of the Institute's research activities is not compromised. In this contribution, we provide an update on the commissioning of a Kubernetes platform designed to ease the development of GPU-powered data analysis workflows and their scalability on heterogeneous distributed computing resources, also using the offloading mechanism with Virtual Kubelet and InterLink API, in synergy with InterTwin. This setup can manage workflows across different resource providers, such as Leonardo CINECA, and hardware types, which are crucial for scientific use cases that require dedicated infrastructures for different parts of the workload. Initial test results, emerging case studies and integration scenarios will be presented with functional tests and benchmarks.

## AI keywords

MLOps; distributed computing; collaborative development platform

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