**Performance Requirements**

MODAK focuses on supporting three major application types for static optimisation: AI training/Inference, Big Data Analytics and Traditional HPC.

**Vision**

Simpler and faster development, deployment, operation and execution of heterogeneous apps in HPC, Cloud & SW-defined computing environments.

**Architecture**

A pattern-based abstraction library that includes application, infrastructure, and performance abstractions.

A design and programming model for applications and infrastructures based on the abstraction library.

A deployment framework that enables the static optimization of abstracted applications onto specific infrastructures.

Automated static and run-time optimization and management of applications.

**MODAK** - Model based Optimiser for Deployment of Application (with Kontainers)

MODAK maps the optimal application parameters to the infrastructure under grant agreement No 825480.

**AI Example**

AI example shows how the data scientist will use the SODALITE framework by specifying the data, config and optimisations options while deploying an AI network written in a high-level API. The SODALITE application optimiser will select a preferred AI framework, optimised library and compiler and then build an optimised container. This will then be deployed to an HPC or Cloud infrastructure.

**Comparison of AI Frameworks**

Performance of different AI frameworks (in singularity container) for a MNIST CNN training workload in CPU only.

Performance of AI frameworks in singularity containers built from source.

Performance of AI frameworks in singularity containers with Graph compilers.

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