DLFi

The Distributed Learning Framework
Modular, Pluggable, and Cloud-Native

≡ Fraunhofer
HHI

Apps

Telecom

Mobility

DLFi

eHealth

Finance

Industry 4.0
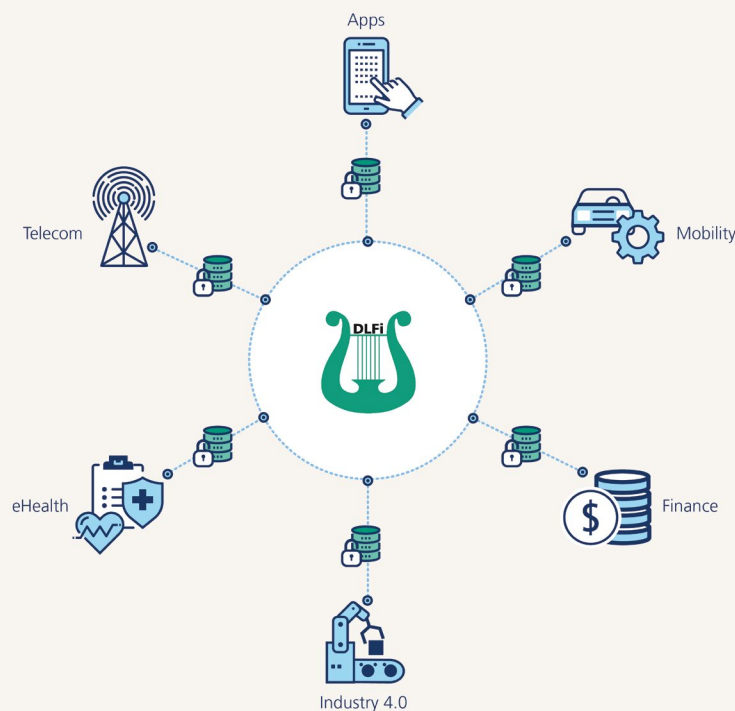
AT A GLANCE

DLFi is a Privacy-Preserving AI-as-a-Service (PP-AIaaS) solution. It provides a training environment on remote sites without necessarily displacing or transferring the data. It enables data providers to train a ML model without revealing their business-critical data to each other. DLFi offers communication-efficiency and guarantees the privacy of data owners.

Features

- Privacy-Preserving
- Cloud-Native
- Modular and Pluggable
- Customized Visualization Dashboard
- GPU-Acceleration Support
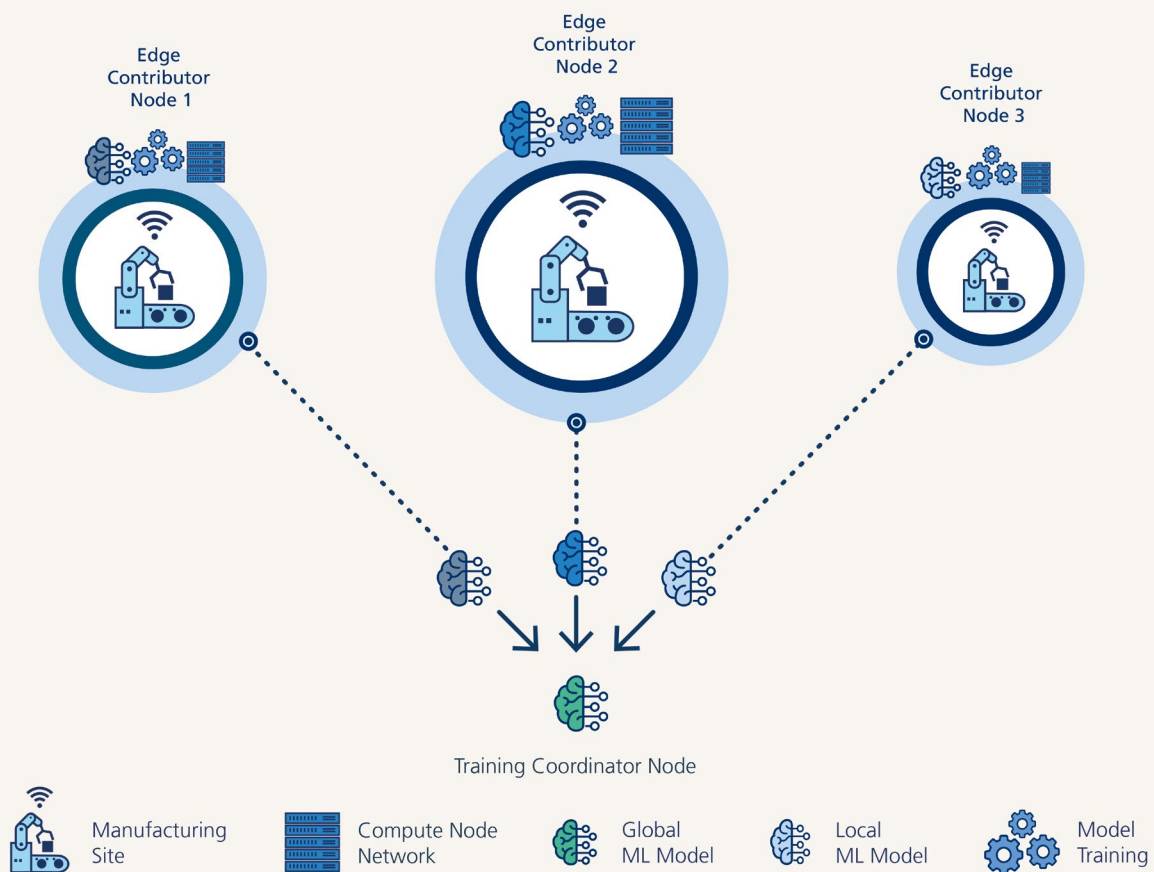- Communication Efficiency

Applications

- ML Model training over geo-distributed data sources
- Shared ML model development exploiting multi-owner data sources
- Secure ML model development over privacy-sensitive datasets

Technical Background

Conventional ML training has the safety concern of collecting all the data in a single place which potentially violates the privacy of the data owners. DLFi aims to solve this.

DLFi is designed at Fraunhofer HHI and it is capable of handling the distributed training of ML models based on geo-distributed remotely located data. DLFi allows the training of a ML model over privacy-sensitive data and assures the data owners that their privacy will not be compromised.

![Fraunhofer HHI logo]

Edge
Contributor
Node 1

Edge
Contributor
Node 2

Edge
Contributor
Node 3

Training Coordinator Node

Manufacturing
Site

Compute Node
Network

Global
ML Model

Local
ML Model

Model
Training

DLFi for ML model development using decentralized data sources from multiple data providers. In this example, each data provider is represented by a manufacturing site

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 Demonstrated Use-cases

- ML Model Development in
  Multi-domain Multi-vendor
  Optical Networks

- ML Model Development in
  Disaggregated Optical Networks

- Vision Inspection for Quality
  Assurance in Factory Shop Floors