FedAI4Industry

Federated, Embedded Artificial Intelligence for Sustainable, Energy-efficient Industries

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MOTIVATION & GOALS

Artificial Intelligence is criticized for having a negative impact on the environment. Complex AI models process a large number of parameters, with significant economic and ecological costs, and require large data sets, which are often generated under ethically questionable conditions. FedAI4Industry calls for a rigorous focus on AI technologies that deliver good results but have lower ecological and social costs.

FedAI4Industry aims at integrating such federated AI into industrial applications. The aim is to make use of operating data from industrial products and devices across value chains, which are currently not shared for reasons of data security, cost, and confidentiality.

Project FactBox

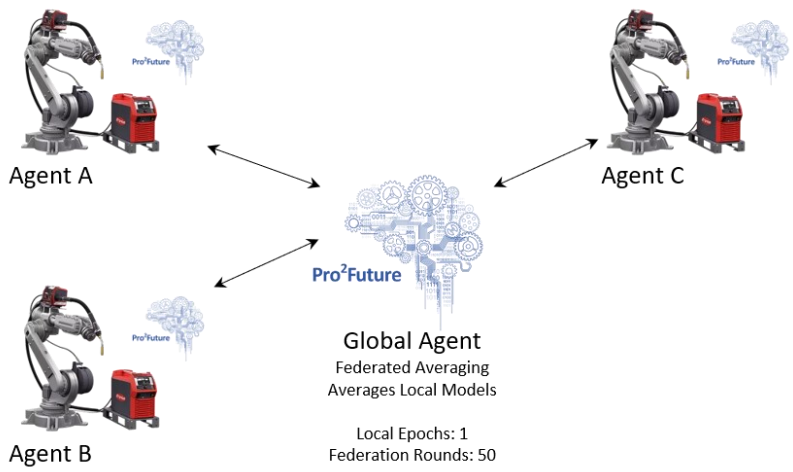
Project Name FedAI4Industry
Project ID nonK
Duration 36 Months

Area 1
Area Perception

Project Lead
Dr. Bernhard Anzengruber-Tanase

APPROACH

Create federations based on real world industrial data from the welding and photovoltaic energy domains.



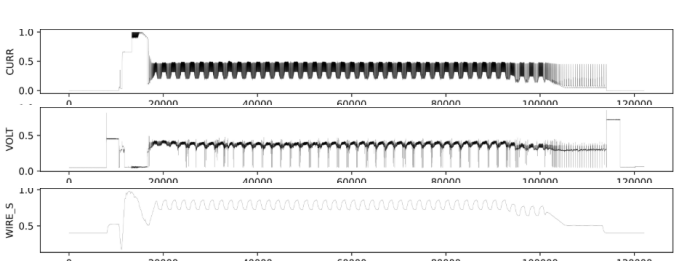
CONTRIBUTION

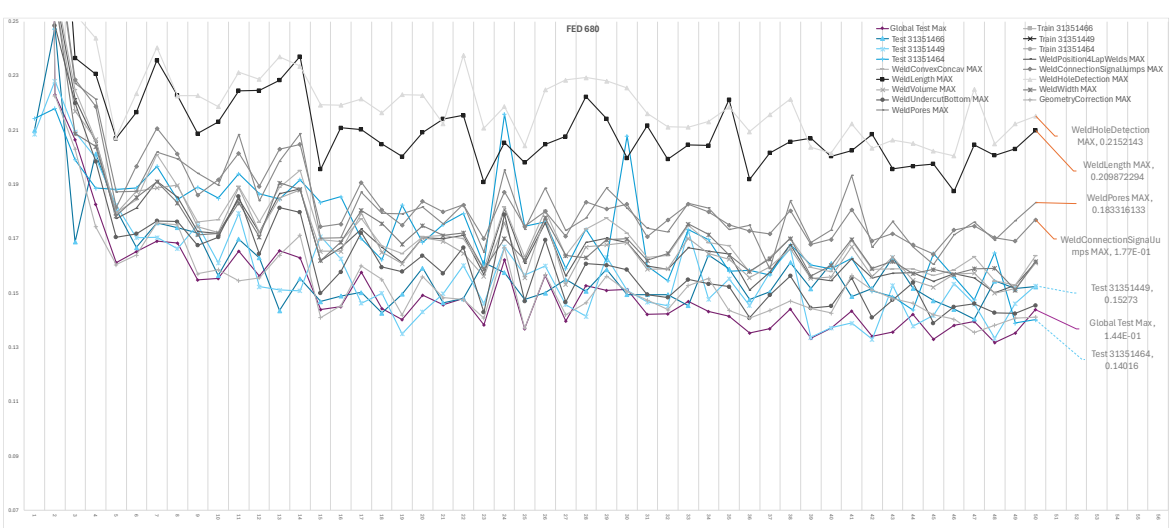
Scientific contribution
Investigating benefit of FKI for ecological Sustainability of UA Industries.
Assessment of the applicability of FKI in industrial environments.
Assessment of the feasibility of confidentiality and data security in the context of FKI applications while maintaining usability.

Economic contribution
Leveraging of operational data of products across value chain.
Strengthening economic USP.
Marketshare of PV Inverters from 24% to 26%.
Optimised Energy Flow Control in Inverters.

PRELIMINARY RESULTS

Early results demonstrate the viability of using federated learning for anomaly detection.





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