AI-DAPT

Automating AI with Human-in-the-Loop and Coupling with Hybrid Science-Guided Principles

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Motivation

As **AI** advances, **data's importance** becomes evident, driving **insights** and **decisions**.

Organizations struggle to find relevant data, facing **delays and risks**.

Quality, **reliability and unbiased data** pose **significant challenges.**

Explainable AI (XAI) needs more development to be user-friendly.

Standardizing data across industries is a challenge, complicating *interoperability* and *reusability*.

Data Importance | **Biases** | **Need for Standardization**

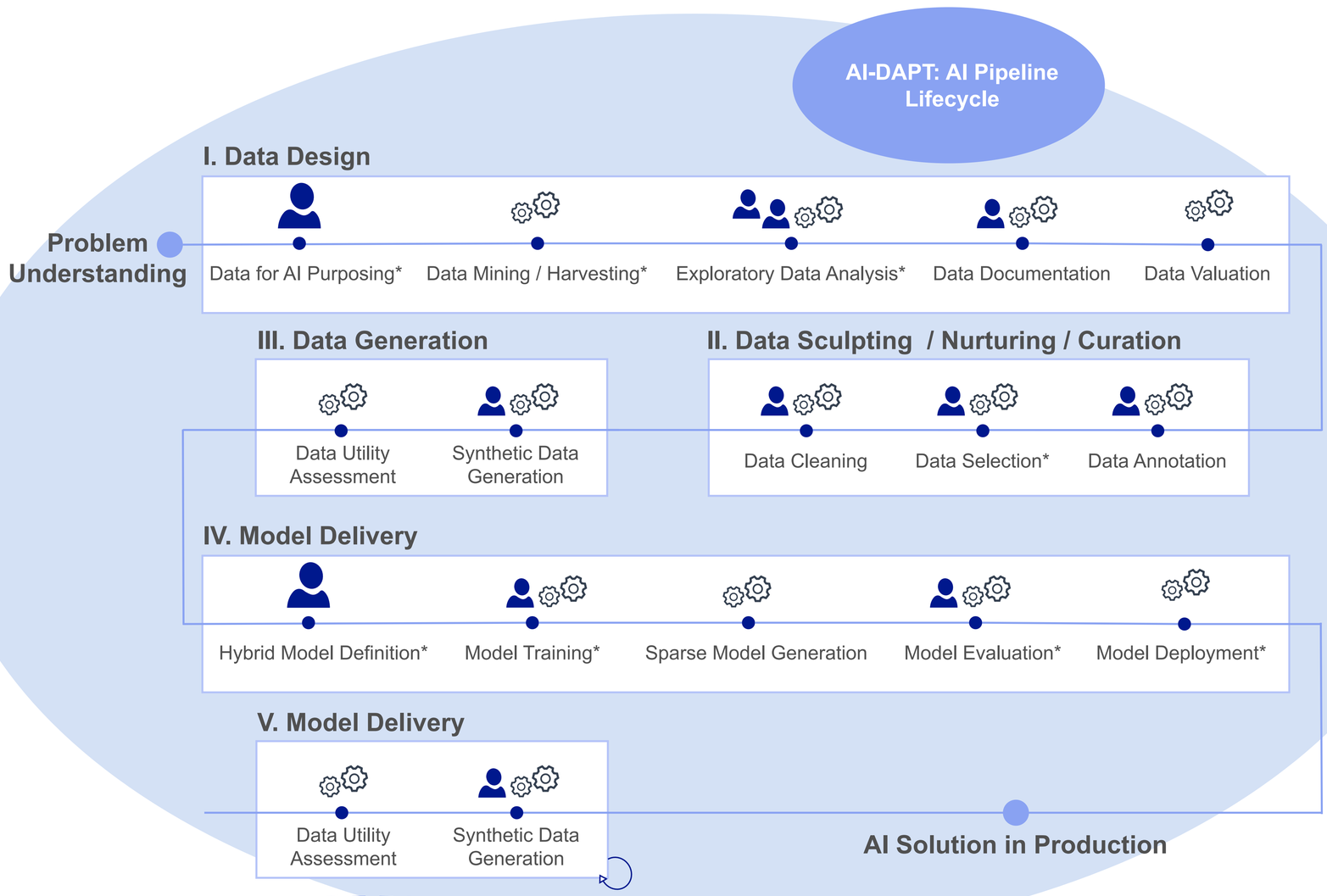
AI-DAPT

Enhance **reliability**, **trustworthiness**, and **fairness of AI solutions**

Promote a **data-centric** mindset **integrated** with a **model-centric**, ***science-based approach***

End-to-end automation using AI techniques

Support throughout the AI-Ops lifecycle: design, execution, observability, and ongoing optimization of data/AI pipelines



Data Preparation: Phases I-III

Up-to-date Data Collection: Phases I, II & IV

Hybrid AI Model Training: Phases I-V

Inference of Hybrid AI Model: Phases I, II, IV & V

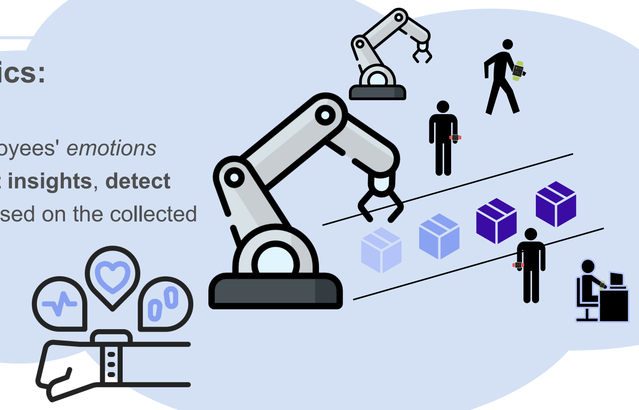
Use-Cases

Health: Personalized Medicine Based on Non-invasive Glucose Monitoring

Utilization of photoplethysmogram (PPG) data & ML to non-invasively collect information related to blood glucose levels to predict type-2 diabetes

Robotics & Cognitive Ergonomics: Human-Centered Automation

Monitor the working environment & the employees' *emotions and mental state* using **wearables**, to **extract insights**, **detect stress** and **optimize working conditions** based on the collected data.

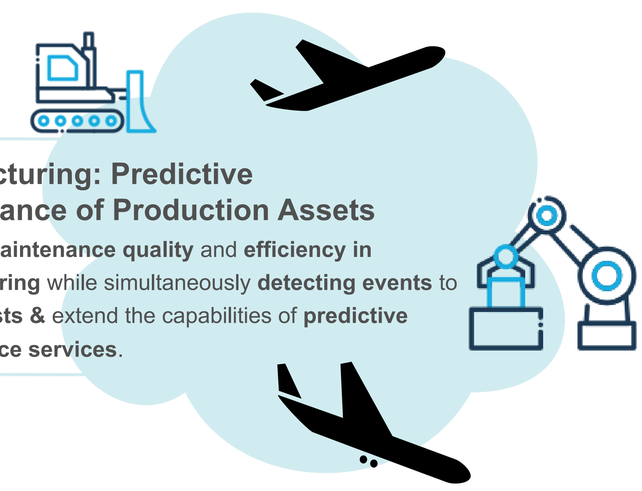


Energy: Cross-vector Residential Demand -Response (DR) Through Smart Heating

Enhance personalized **load** and **price forecasts in energy consumption**, & improve **accuracy of predictions** for demand response patterns.

Manufacturing: Predictive Maintenance of Production Assets

Enhance **maintenance quality** and **efficiency in manufacturing** while simultaneously **detecting events** to **reduce costs &** extend the capabilities of **predictive maintenance services**.



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