Newsletter #1

May 2024

In this edition, we're excited to introduce you to the AI-DAPT concept, a groundbreaking initiative aimed at revolutionizing the way AI integrates with adaptive systems. Discover insights from our latest pilot projects, get to know the diverse consortium of experts and organizations driving AI-DAPT forward, and stay informed about our upcoming events and milestones. Join us on this journey as we push the boundaries of innovation and collaboration in the world of AI.

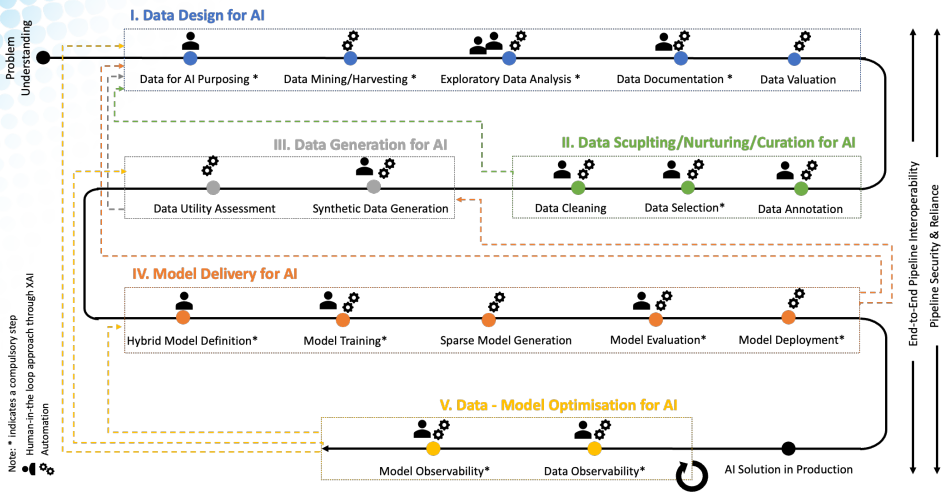
The AI-DAPT Concept

AI-DAPT approaches AI with a focus on data, leveraging automation and AI techniques to construct robust, intelligent, and scalable data-AI pipelines. These pipelines are designed to continuously adapt and learn from their environment, executing efficient steps that integrate operational and business logic. They can be triggered by schedules, real-time events, or other triggers, and can run in parallel or sequence.

During Phase I, known as “Data Design for AI“, data scientists select suitable data for the AI solution, drawing on domain knowledge. Automated processes fetch raw data from internal databases to ensure it’s up-to-date. Data characteristics are analyzed and summarized collaboratively by data scientists and business users, documenting findings for standardized reports.

In Phase II, “Data Sculpting/Nurturing/Curation for AI“, AI/ML techniques are employed to ensure data representativeness and quality. Features are annotated semantically and engineered, with relevant ones chosen for the AI model. Cleaning techniques are applied to enhance data quality.

Phase III, “Data Generation for AI“, tackles data scarcity by creating synthetic data to supplement or replace real data. Data utility assessment evaluates the suitability of synthetic data.



In Phase IV, “Model Delivery for AI“, data scientists oversee the AI model lifecycle, using hybrid science-guided ML approaches. Models are configured, trained, and deployed for real-world application, considering prediction uncertainty.

Phase V, “Data-Model Optimization for AI“, focuses on continuous monitoring and improvement of the AI solution based on real-life operation circumstances. Data and model observability ensure timely adjustments.

Health ‘Personalised medicine based on non-invasive Glucose monitoring’

AI-DAPT aims to pioneer non-invasive monitoring solutions through AI analysis of physiological signals, revolutionizing healthcare with early detection and continuous monitoring for improved patient outcomes.

Energy ‘Cross-vector Residential DR through Smart Heating’

Addressing energy inefficiency in buildings, it uses monitoring and ML techniques to optimize forecasts and enable personalized demand response, achieving energy savings and reducing peak load.

Manufacturing ‘Predictive Maintenance of Production Assets’

In manufacturing, it leverages AI for predictive maintenance, optimizing spare parts and workforce planning. With synthetic data generation and bias detection, it delivers adaptable AI models, enhancing uptime and cutting costs.

Robotics & Cognitive Ergonomics ‘Human-centered automation’

Enhancing human-centered automation, it integrates real-time worker data to optimize productivity and safety through AI pipelines that predict and mitigate stress, showcasing the benefits of digitalizing human factors in industry.

Consortium

Spanning across Europe, our team comprises 18 partners hailing from Greece, Germany, Ireland, Portugal, Spain, Cyprus, and Italy. From renowned research institutions to innovative businesses, each member brings a wealth of expertise in diverse fields such as information technologies, sustainable innovation, business intelligence, and beyond.

COORDINATOR:

- **ATHENA**
  https://www.athenarc.gr/en/home

PARTNERS:

- **FRAUNHOFER**
  https://www.fraunhofer.de/
- **SETU**
  https://www.setu.ie/
- **UNINOVA**
  https://www.uninova.pt/
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  https://zenith.gr/el/
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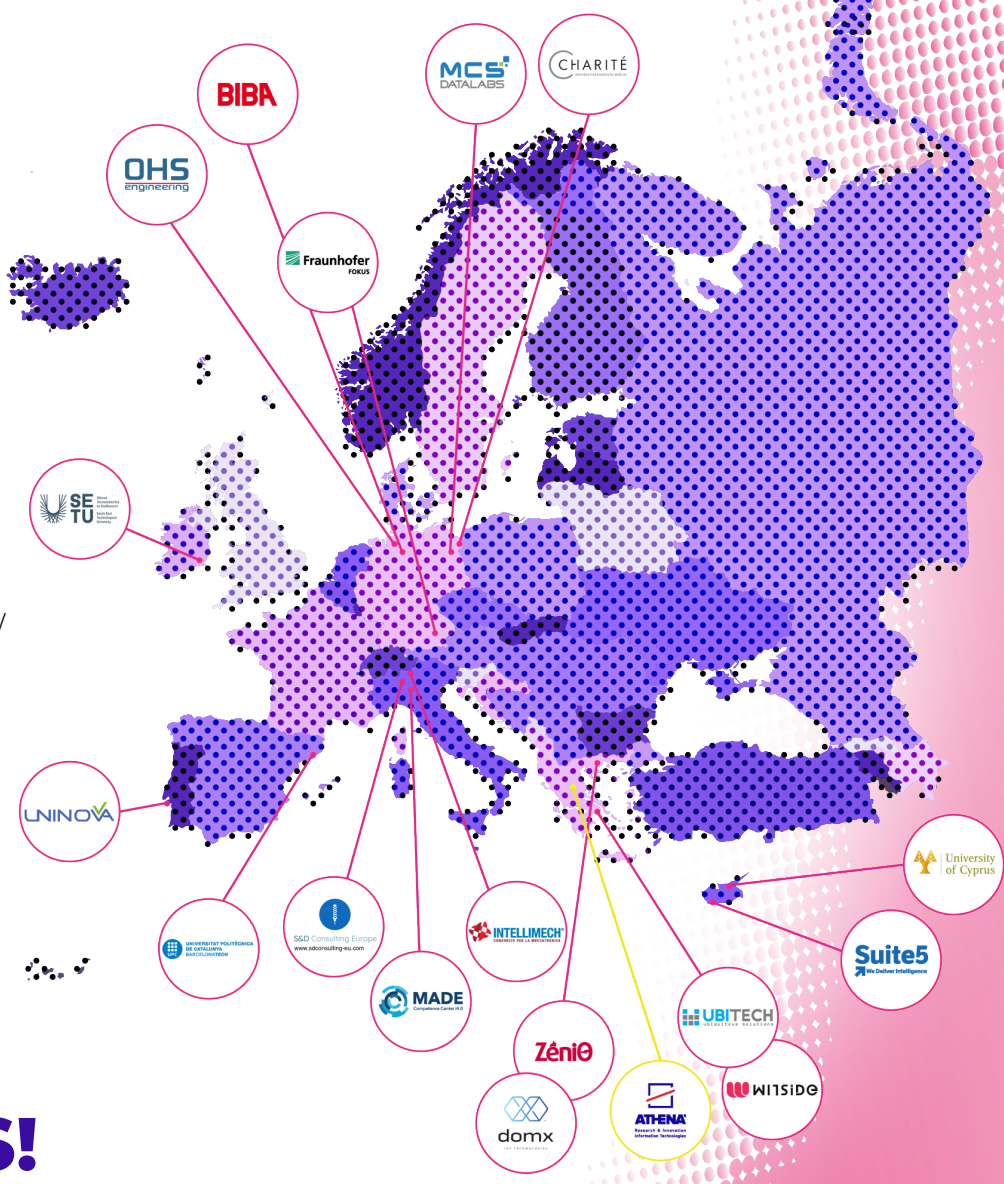
  https://www.intellimech.it/



NEXT EVENTS!

AI-Dapt is excited to join the 6th Summit on Gender Equality in Computing (GEC'24) on June 13-14, 2024 at the University of Cyprus, Chipre. This prestigious event aims to promote gender-equal access to the forefront of computer science, encouraging and educating both women and men to achieve their goals and maximize their potential in digital professions.

gec24

AI-Dapt is proud to present a paper at the 30th ICE IEEE/ITMC Conference (ICE 2024), which will be held on Madeira Island, Portugal, as part of the Madeira Digital Transformation Week (MDTWeek). This year's conference theme will explore pivotal advancements in digital transformation. By contributing to this esteemed event, AI-Dapt aims to foster collaboration and knowledge exchange, driving forward innovation in the industry.

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