CONSORTIUM

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KU LEUVEN CiTiP
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UNIVERSIDADE DA CORUÑA

PNO INNOVATION

CTT-INNOVATIONS

Instituto de Sistemas e Robótica | LISBOA

IdISSC INSTITUTO de INVESTIGACIÓN SANITARIA Hospital Clínico San Carlos

SaludMadrid Hospital Clínico San Carlos

PNO INNOVATION

ARCADA

CUOMO IT Consulting GmbH

AXIOLOGIC

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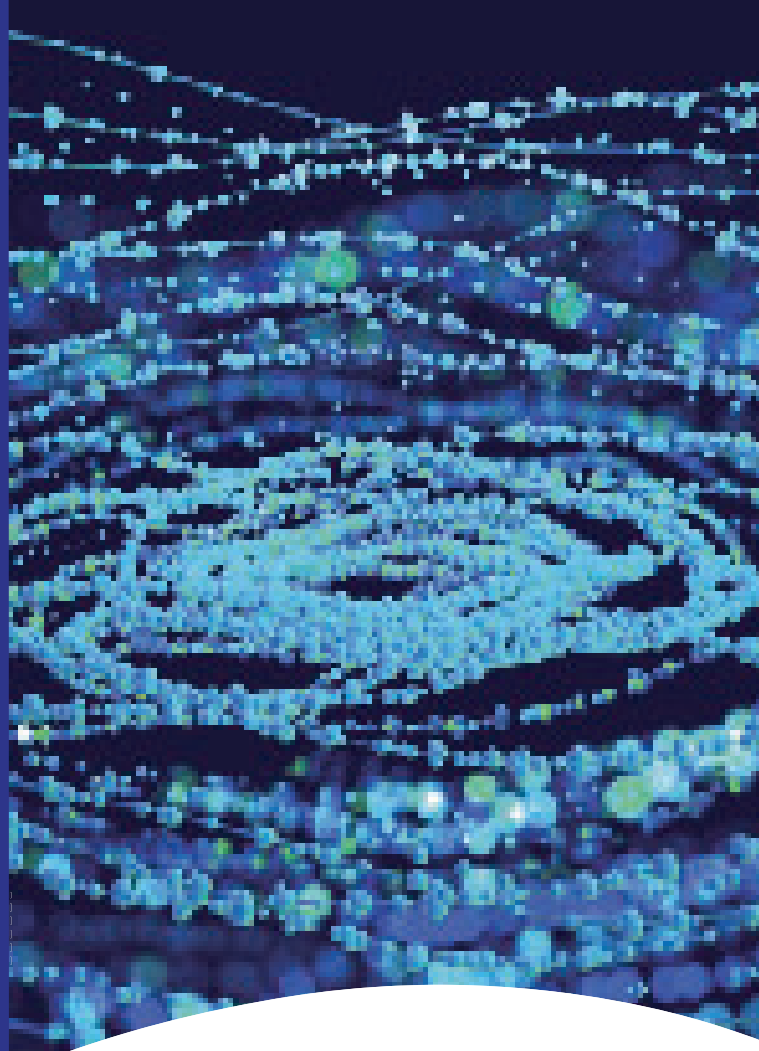

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ACHILLES

HUMAN-CENTRED MACHINE LEARNING: LIGHTER, CLEARER, SAFER

THE PROJECT

ACHILLES aims to create an efficient, compliant, and ethical AI ecosystem, addressing challenges related to privacy, security, fairness, and transparency. The project proposes an iterative development cycle inspired by clinical trials, consisting of four modules focused on human-centric, data-centric, model-centric, and deployment-centric strategies.This approach seeks to enhance the performance and reliability of AI systems while ensuring compliance with legal and ethical standards. A key innovation is the development of a machine learning-driven Integrated Development Environment (IDE), which will streamline the integration between modules and promote the creation of responsible AI solutions.

Involving 16 partners from 10 countries, ACHILLES seeks to strengthen the European AI ecosystem, validating its applications in real use cases such as healthcare, identity verification, content creation, and pharmaceuticals.

OBJECTIVES

The primary goal of ACHILLES is to foster the development of efficient, trustworthy, and responsible data-driven AI applications by creating a modular framework that ensures AI models are lighter, clearer, and safer. The framework supports an iterative lifecycle with distinct stages, addressing human ethics, data, models, deployment, and human agency. Specific objectives (SOs) guide the project's strategy, with defined results and key performance indicators (KPIs) to measure success. ACHILLES aims to impact the AI ecosystem by improving performance, compliance, and transparency while promoting responsible AI development across various sectors.

SO1 Develop ethical and legal frameworks for AI, ensuring compliance with data protection regulations and incorporating human values into AI systems.

SO2 Establish a framework for high-quality, diverse, and representative data, with an emphasis on fairness, bias reduction, and data interoperability.

SO3 Focus on privacy protection by creating tools for GDPR compliance and privacy-preserving AI techniques, including federated learning and synthetic data models.

SO4 Optimize AI model training and deployment to reduce energy consumption, time requirements, and computational costs, aligned with environmental sustainability goals.

SO5 Enhance transparency, explainability, and robustness in AI models, ensuring trustworthy continuous monitoring and vulnerability assessment.

SO6 Develop a user-friendly, ML-driven Integrated Development Environment (IDE) to support efficient, compliant, and ethical AI development throughout the lifecycle.

WORKPLAN

ACHILLES's work packages (WP) and relationships are shown in the diagram below, as well as a brief description. We note that, to have a more balanced effort in each WP, we merged the model- and deployment-centric module developments and divided the Human-centric ones. We also defined a standalone WP dedicated to privacy protection.