SYNTHIA IHI: Synthetic Data Generation Framework for Integrated Validation of Use Cases and AI Healthcare Applications

Description

SYNTHIA is an ambitious collaboration between public and private institutions to facilitate the responsible use of Synthetic Data (SD)in healthcare applications. The project will improve the methodological and technical aspects of SD Generation (SDG) by developingnew techniques and advancing established ones for different data modalities, including genomics and imaging, to improve the generation of realistic multimodal and longitudinal data.

This project will provide the research community with approaches for transparent benchmarking of alternative SDG methods for specific applications, identify and establish evaluation metrics and methodologies, and contribute to the standardisation of an evaluation assessment framework for SD. Robust evidence of SD applicability in a set of use cases across a broad spectrum of medical conditions will be crucial to demonstrate the potential of SD to accelerate data-driven solutions of equivalent quality to those derived from real patient data. Furthermore, legal and regulatory implications of SD use will be analysed with the aim of delivering an assurance framework to guide secure SD utilization in healthcare.

These significant breakthroughs will be implemented through the open SYNTHIA federated platform, facilitating responsible SD use by the health research community. The platform will facilitate users´ long-term access to extensively validated, reusable synthetic datasets, as well as to SDG workflows and SD assessment frameworks. The federated infrastructure will rely on extended open-source frameworks for interoperability with other data-sharing infrastructures in the context of the European Health Data Space.

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Barcelona Supercomputing Center - Centro Nacional de Supercomputación