clearbox AI

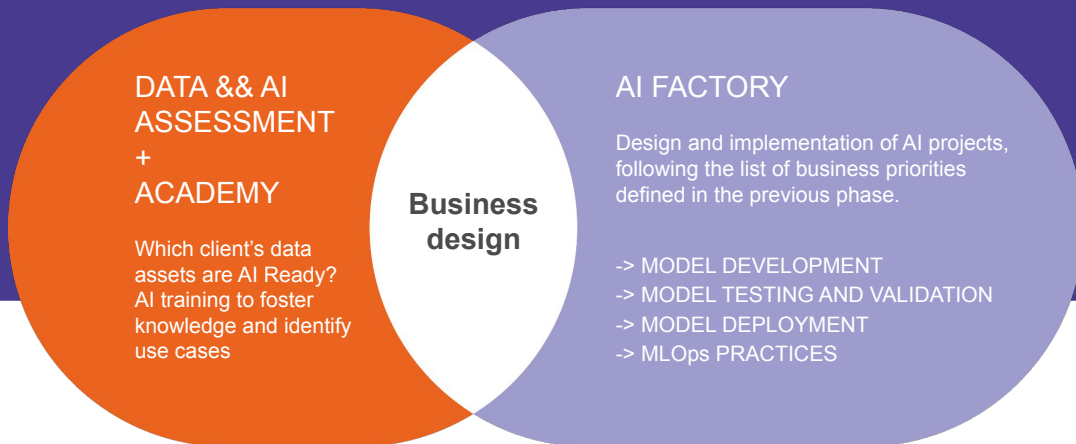# Private and Inclusive Synthetic Medical data for precision medicine powered by Swarm learning(PRISMS)

clearbox AI

Since 2019, our mission has been to understand and solve the challenges that companies face when testing and deploying AI projects into production.

DATA && AI ASSESSMENT + ACADEMY

Which client's data assets are AI Ready? AI training to foster knowledge and identify use cases

Business design

AI FACTORY

Design and implementation of AI projects, following the list of business priorities defined in the previous phase.

-> MODEL DEVELOPMENT
-> MODEL TESTING AND VALIDATION
-> MODEL DEPLOYMENT
-> MLOps PRACTICES

OUR COMPANY

Founded by innovators who decided to exploit the newest AI and Data technologies coming from research and the academic world to build reliable, concrete, and realistic AI projects, with the final goal of generating business value.

MANAGEMENT TEAM

A team of Data, Data Science, ML, MLOps, Software and Privacy experts.
Certified CIPP/E.

R&D PARTNERS

OXFORD INTERNET INSTITUTE

Fraunhofer

ITU

European Commission

RESULTS

BEP

Financially viable and independent

30+

Projects delivered

ACHIEVEMENTS

The company won the National Innovation Award in the ICT domain and the European Seal of Excellence.

SELECTION OF CLIENTS

BANCO BPM

GENERALI

BNP PARIBAS

REALE MUTUA

Sella

Posteitaliane

ALSTOM

vitesco TECHNOLOGIES

Bonfiglioli

Mercedes-Benz

Horsa GROUP

CENTRI DENTISTICI PRIMO
IL TUO DENTISTA PER LA VITA

clearbox AI

>>

What's PRISMS?

A Project with HEAL ITALIA
Spoke leader:
Università di Bologna
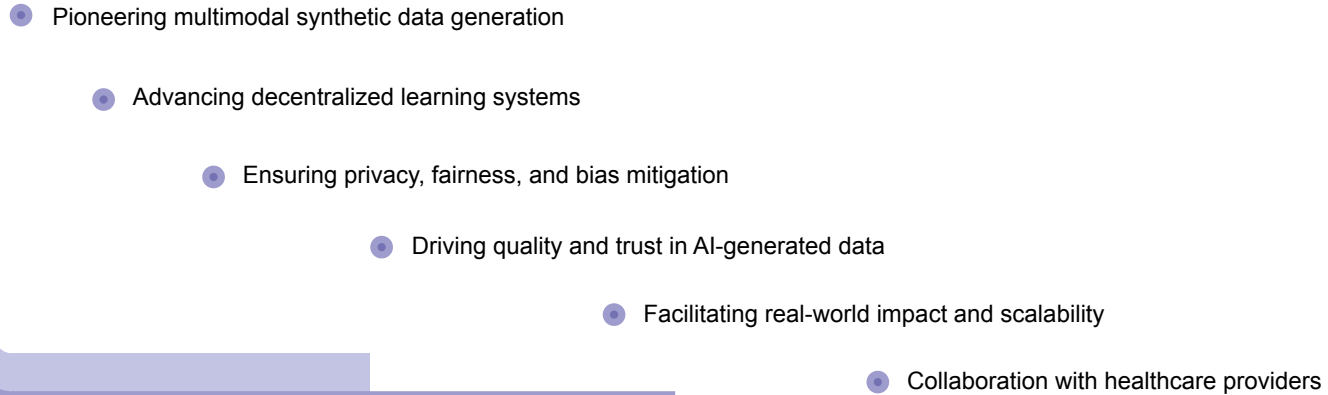
Principal Goals for the PRISMS Project

Pioneering multimodal synthetic data generation

Advancing decentralized learning systems

Ensuring privacy, fairness, and bias mitigation

Driving quality and trust in AI-generated data

Facilitating real-world impact and scalability

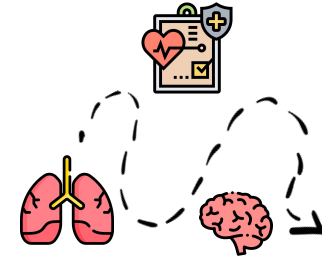Collaboration with healthcare providers

Focus on Multimodal synthetic data model
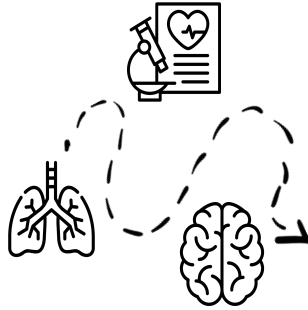
Generate contextual synthetic medical images (MRI, CT) and tabular clinical data / time-series
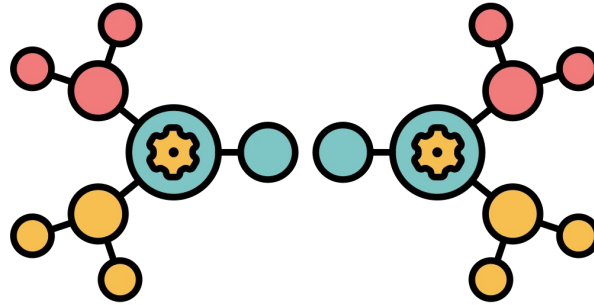
Joint learning of a multimodal and shared data space

Verification and Validation of the multimodal synthetic dataset

Key Gaps in AI Precision Medicine and Our Solution Pathways

- Limited meaningful and general data

- Privacy and bias risks

- Need for high-performance models

- Slow precision medicine models adoption

- Generation models for multimodal and minority-driven clinical synthetic data.

- Checking and debiasing toolkit, training via swarm learning

- Quality assessment toolkit through ensemble of metrics

- Provision of representative and regulatory-compliant datasets

What PRISMS will bring to table:

Models, datasets, assessment, toolkit

WP1:
Design of multimodal synthetic data models

WP2:
Privacy, Bias, Fairness and synthetic data quality assessment
Library Design and Implementation

WP3:
Deploying on Swarm Learning Frameworks

WP4:
Testing, Validation, and Iteration of the developed systems

WP5:
Project Management, Communication, and Exploitation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WP1	■	■	■	■	■										
WP2			■	■	■	■	■	■	■						
WP3						■	■	■	■	■	■	■			
WP4									■	■	■	■	■	■	■
WP5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

- ML Engineers, Data Scientists, Data Management, Communications, Project Manager
- 15 month time frame

7

ClearboxAI synergy with Heal Italia

- Enhanced Data Privacy Compliance

- Medical Regulatory Expertise

- Advanced integration of synthetic data in state of the art clinical research

- Profound expertise in medical procedures, analysis and dataset processing

clearbox AI

humans && machines

Thanks

Feel free to contact us:

www.clearbox.ai

support@clearbox.ai

@ClearboxAI