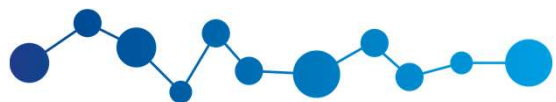


Unlocking the Future of Big Data



May 15th, 2024



FutureData4EU

Training Future Big Data Experts for Europe



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



UNIVERSITÀ
CATTOLICA
del Sacro Cuore



Università
degli Studi
di Ferrara



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA



UNIVERSITÀ
DI PARMA



POLITECNICO
MILANO 1863

Unlocking the Future of Big Data - Summary

- General overview of the Thematic Area
- List of the Doctoral Positions and Universities involved
- Sub Areas of Research to be developed during the project
- Contacts

Overview of the Thematic Area - Health

Objectives

- i) Advanced Research Skills:** evaluate cutting-edge research in AI and its applications in healthcare settings
- ii) Deep Understanding of AI Techniques:** comprehensive understanding of various AI techniques
- iii) Healthcare Domain Knowledge:** insight into healthcare systems, medical terminology, clinical workflows, and relevant regulatory frameworks

Goals

- i) Interdisciplinary Collaboration:** collaboration between AI experts, healthcare professionals, and other stakeholders
- ii) Leadership and Impact:** leaders in the field of AI in health

Methodologies adopted

- i) Effective Communication and Dissemination:** communication skills to effectively disseminate research findings
- ii) Translation of Research into Practice:** translation of research findings into practical applications
- ii) Innovation and Entrepreneurship:** commercialization pathways, such as patents, startups, or industry collaborations.

List of the Doctoral Positions and Universities involved Health (11 total)

4

UNIBO

- Big data and statistical theory for enhanced inferences in domain sciences
- Enhancing Dermatologic Interventions through Big Data-Driven Understanding of Placebo Effects
- Data driven determination of statistical properties of proteins
- AI-based neurobiological phenotyping of patients with expansion repeats and brain disorders

2

UNIFE

- Evolutionary perspective on health and medicine through the lens of paleogenomics
- AI-Based Perioperative Guidance Tool for Vitreoretinal Surgery

1

UNIMORE

- Big-data from single-cell multiomics in somatic stem cells for clinical application

4

UNIPR

- Computer-Aided Drug Design
- Illuminating dark gene targets
- Implementation of artificial intelligence algorithms in the sonographic assessment of fetal anatomy
- Multiomic Approach and Big Data Integration to Identify Predictive Signatures for the Response to Immunotherapy in Solid Tumors



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Sub Areas of Research to be developed during the project

Model implementation

new methods and models for
unconventional data structures

predictions of protein function,
pathogenicity, therapeutic properties

modeling the mechanism by which **covalent**
drugs interact with molecular targets

biological roles of **unknown target genes**

integrated **atlas of in vitro cultured**
human epithelial cells from the different
anatomical compartment

Health tools

pathophysiological bases of
neurodegenerative diseases
**(Amyotrophic Lateral Sclerosis (ALS),
Myotonic Dystrophy type 1 (DM1) and
type 2 (DM2), Huntington's disease
(HD), and Spinocerebellar Ataxias
(SCAs)**

psycho-neuro-biological research
within **dermatology**

perioperative guidance tool that
provides real-time assistance to
surgeons during **vitreoretinal**
procedures

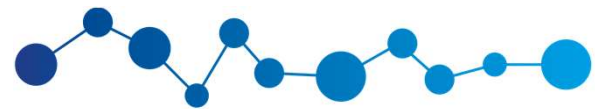
ultrasound-based DL-algorithm for **fetal**
brain structures discrimination

provide a non-invasive approach to
advanced **cancer patients** and predict
the response to immunotherapy

paleogenomic data for health improvement

CONTACTS

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