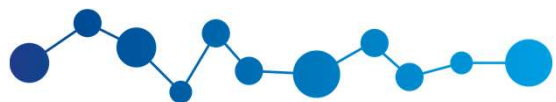


Unlocking the Future of Big Data



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

- Thematic Area: Digital, Industry, and Space

The program supports research on digitization to improve health care and well-being, quantum computing, data mining for observations and measurements in space, and big data analysis and artificial intelligence to optimize and automate industrial production processes

- Doctoral Positions and Universities:

1. Deep learning for renal pathology prognosis prediction (University of Modena and Reggio Emilia-UniMORE)
2. Data mining for space borne astrophysical and cosmological observations (University of Ferrara-UniFE)
3. Spin Systems for Quantum Technologies (University of Parma-UniPR)
4. Big Data Analysis for Industrial Diagnostic (University of Modena and Reggio Emilia-UniMORE)
5. Artificial Intelligence to support manufacturing (Politecnico di Milano-PoliMI)

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Overview of the Thematic Area

TA Objectives: Multiple objectives with a common denominator

digitalization2X

- 1) bridge the gap between traditional diagnostic methods and predictive AI in healthcare
- 2) enable quantum computing through novel materials developed and analyzed using large-scale computational techniques
- 3) Understand the Universe using advanced data mining techniques
- 4) unlock the full potential of big data in industrial diagnostics and support manufacturing thereby facilitating the development of more intelligent, efficient, and sustainable industrial ecosystems



List of the Doctoral Positions and Universities involved

Digital, Industry, Space (5 total)

1

UNIFE

— Data mining for space borne astrophysical and cosmological observations

2

UNIMORE

— Big Data Analysis for Industrial Diagnostic

— Deep learning for renal pathology prognosis prediction

1

UNIPR

— Spin Systems for Quantum Technologies

1

POLIMI

— Artificial Intelligence to support manufacturing

Facilities and profile of candidates

Interdisciplinary research will be conducted within the academic-industrial ecosystem of the Emilia-Romagna region, leveraging numerous established connections with international groups

Depending on the project, doctoral students will have access to:

- High-Performance Computing: collaboration with CINECA provides access to the 6th largest supercomputer in the world
- Resources from the National Institute for Nuclear Physics (INFN), the National Institute for Astrophysics (INAF)
- Strong partnerships with industrial companies and private research centers will allow to integrate and implement developed algorithms in real-world industrial test cases

Ideal candidates must demonstrate the ability to work collaboratively in multidisciplinary teams, with strong problem-solving skills and creativity in tackling complex challenges. Depending on the project in addition to skills in high-level programming languages, and machine learning/data mining techniques, basic skills in the topics covered by the project are required

More information: cofund@unibo.it



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