



PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 39th cycle

Research Area n. 1 - Computer Science and Engineering

**THEMATIC Research Field: EFFICIENT DATA SHARING FOR FEDERATED ANALYTICS IN
CLINICAL TRIALS**

Monthly net income of PhDscholarship (max 36 months)

€ 1400.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

**Motivation and objectives of the research
in this field**

The success of multi-centric clinical trials depends both on the availability of data and on the ability to manage them in distributed and heterogeneous environments. Depending on the resources made available by each trial participant, there may be computational and storage capacities that offer different support for data analysis. The aim of the research activity is to propose methods and tools that allow the efficient execution of data analysis within federated environments that depend on, and at the same time exploit, the heterogeneity of the resources made available. This will require the definition of a federation model that allows evaluating the balance between data exchange and/or application exchange. The proposed approach should be defined also taking into account the heterogeneity of data formats, resources available, type of analysis, and possible constraints which can limit the possible configurations (e.g., GDPR compliance).

**Methods and techniques that will be
developed and used to carry out the
research**

The research conducted will be an experimental research based on the development of a prototype able to demonstrate the feasibility and the effectiveness of the proposed theoretical method. The research will take advantage of a specific clinical trial related the analysis of Long-covid effects.



Educational objectives	To understand the models and methods underlying the data analytic practice in healthcare. To learn how to describe data for secondary usage purpose.
Job opportunities	The candidate, after concluding the Ph.D. study, can be qualified for data engineering-related positions with specific emphasis on data management, data profiling data integration, data privacy.
Composition of the research group	1 Full Professors 3 Associated Professors 2 Assistant Professors 3 PhD Students
Name of the research directors	Pierluigi Plebani

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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student. TEACHING ASSISTANTSHIP: availability of funding in recognition of supporting teaching activities by the PhD student. There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations. COMPUTER AVAILABILITY: individual use. DESK AVAILABILITY: individual use.

