



# PhD in BIOINGEGNERIA / BIOENGINEERING - 39th cycle

**PNRR 118 PA Research Field: CLINICAL DECISION SUPPORT SYSTEMS AND ARTIFICIAL INTELLIGENCE TOOLS FOR DATA ANALYSIS IN THE REGIONAL ELECTRONIC HEALTH RECORD**

## 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

Regione Lombardia, among the various projects envisaged by the National Recovery and Resilience Plan for the enhancement of the level of digitalization of the Nation Healthcare System, has started the implementation and dissemination of a new Regional Electronic Medical Record (REMR) that will be applied in over 50 public hospitals. The new REMR will base on the newest technologies and data modelling standards, which require a careful study of the user needs and requirements, of the involved processes and of the potential applications that go beyond the cure, but open new perspectives and paradigms for the whole healthcare process and for the clinical research.

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

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The REMR will be implemented through the use of latest-generation technologies that refer to the "Cloud native" and "Mobile first" paradigms and will have the architectural, technological and functional characteristics necessary for the application of the International regulation: Regulation (EU) 2017/745 for the use of medical devices in the health sector. The introduction of CDSS systems and AI technologies represent an opportunity for strong organizational and professional change and facilitates the introduction of new models of



	<p>clinical management of hospital and territorial processes. The introduction of these technologies requires to be governed and managed in order to properly assess and document, in a scientific way, the actual benefits that can be obtained on clinical practice and on the optimization of social care pathways. Methodologies of Health Technology assessment will be applied at this purpose.</p>
<b>Educational objectives</b>	<p>The candidate will learn specific methodologies for the organization, management and use of clinical data, with a specific focus on standards for interoperability and data sharing based on the models in use at national and international level. She/he will develop capability in interactions with clinical and medical partners, understanding their needs and will be able to design and develop proper solutions for the adoption in clinical practice. She/he will learn to work in interdisciplinary teams; in designing and implementing research protocols; in analysing and managing big-data for clinical applications.</p>
<b>Job opportunities</b>	<p>Research in Universities or other institutions; Employment in public or private healthcare providers Hospital information systems Health care companies Health care data scientist</p>
<b>Composition of the research group</b>	<p>4 Full Professors 3 Associated Professors 5 Assistant Professors 15 PhD Students</p>
<b>Name of the research directors</b>	PROF. ANNA MARIA BIANCHI

#### Contacts

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#### Additional support - Financial aid per PhD student per year (gross amount)

<b>Housing - Foreign Students</b>	--
<b>Housing - Out-of-town residents (more than 80Km out of Milano)</b>	--



<b>Scholarship Increase for a period abroad</b>	
<b>Amount monthly</b>	700.0 €
<b>By number of months</b>	6

<b>National Operational Program for Research and Innovation</b>	
<b>Company where the candidate will attend the stage (name and brief description)</b>	REGIONE LOMBARDIA
<b>By number of months at the company</b>	6
<b>Institution or company where the candidate will spend the period abroad (name and brief description)</b>	Universita? Politecnica di Valencia
<b>By number of months abroad</b>	6

<b>Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information</b>
The PhD student will be involved in educational activities along with teaching assistantship. A shared desk and computer will be given to the student for the time needed to carry out the research.