



PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 38th cycle

Research Area n. 1 - Computer Science and Engineering

**PARTENARIATO PNRR Research Field: DATA ANALYTICS AND DECISION SUPPORT
SYSTEM FOR ENVIRONMENT AND BIODIVERSITY MONITORING**

Monthly net income of PhDscholarship (max 36 months)

€ 1250.0

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

IoT and Remote Sensing data acquisition can support the decision making in the processes of environmental and biodiversity monitoring through a mix of human-led and machine-led data analysis and prediction. However, reaping the benefits of the digital transformation of the processes requires novel policies, processes, methods and technological infrastructures, which must be designed to fit the PA organizations. The research aims at setting up a multi-disciplinary methodology (computer science, computer vision, big data, Earth Observation, social sciences, economics) for improving the decision making process in territory

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

The research will implement AI-powered decision support systems and digital processes for data collection and analysis in the territory and biodiversity monitoring field, including methods and techniques for predicting the impact of potential environment hazards and for supporting the definition of optimal remediation and/or mitigation policies

Educational objectives

The educational objectives involve the capacity to analyse the current processes in the environment and biodiversity monitoring sector, to elaborate innovative policies and processes based on data-driven predictive models so as to maximize efficiency and efficacy through the use of



	digital tools (AI-powered, multimodal data analytics and DSS) and to deploy and assess the designed decision support systems in complex real-world scenarios
Job opportunities	The doctor will be able to deploy the acquired skill not only in the public administration but also in the industry. Target employers are the environment agencies of the PA and the data hungry industries such as the enterprises servicing the Earth Observation, agriculture, construction and logistics sectors
Composition of the research group	2 Full Professors 2 Associated Professors 2 Assistant Professors 3 PhD Students
Name of the research directors	Piero Fraternali

Contacts	
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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	625.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>The proposal is part of the research program of the National Biodiversity Future Center (NBFC) and has the purpose of supporting decision-making processes in the sector of environmental monitoring and biodiversity characterization contributing to the redesign and simplification of intervention models, through artificial intelligence technologies and solutions (data analysis and predictive models) capable of guaranteeing greater efficiency.</p> <p>EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid</p>



per PhD student

5.095,96 Euro per 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