



PhD in BIOINGEGNERIA / BIOENGINEERING - 40th cycle

PNRR 630 Research Field: AUTONOMY IN ROBOTICS FOR MICROSURGERY

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	<p>The research is aimed at providing robotic assistance during delicate microsurgical interventions.</p> <p>The robot will allow for a better surgical outcome, increasing the intervention safety and accuracy.</p>
Methods and techniques that will be developed and used to carry out the research	<p>The candidate will implement methods and techniques for robotic control and machine learning for computer vision. The research will be conducted in a joint agreement with MMI surgical (USA).</p> <p>The research will be conducted at Politecnico di Milano (Nearlab, DEIB) and at the MMI premises in Pisa (Italy).</p>
Educational objectives	<ul style="list-style-type: none"> - Acquire capabilities for controlling and interfacing human and robots; - Understanding the clinical needs and evaluate the effectiveness of the approach; - Disseminate scientific results; - Communicate scientific results in outreach events.
Job opportunities	<ul style="list-style-type: none"> •Research institutes; •research division in companies; •universities; •hospitals
Composition of the research group	<p>1 Full Professors 1 Associated Professors 0 Assistant Professors</p>



	0 Assistant Professors 10 PhD Students
Name of the research directors	Elena De Momi, Emanuele Ruffaldi

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	700.0 €
By number of months	6

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	MEDICAL MICROINSTRUMENTS INC.
By number of months at the company	6
Institution or company where the candidate will spend the period abroad (name and brief description)	University of Leeds, Robotics Institute
By number of months abroad	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>www.nearlab.polimi.it</p> <p>Educational activity: The student will be encouraged to attend to courses at POLIMI or abroad 2 / 3in International Schools.</p> <p>Teaching assistantship: There are various forms of financial aid for activities of support to the teaching practice.</p> <p>The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations. Computer and desk availability: the student will be allowed to access facilities of the DEIB.</p>