

Politecnico di Milano

PhD in Bioengineering

**Research Title: Novel controls for upper limbs exo-
skeletons | Controlli innovativi per esoscheletri di arto
superiore**

Scholarships and Financial support	
Monthly net income of PhD scholarship (max 36 months)	€. 1.250/mensili (In case of a change of the welfare rates during the three-year period, the amount could be slightly modified)
Number of scholarships	1
Beginning of PhD	May 1 st 2021
Deadline for application	8 March 2021
Context of the research activity	
Motivations and objectives of the research in this field	<p>The main objective of this PhD theme is to design and test novel strategies and interfaces for controlling upper limbs exoskeletons.</p> <p>Assist as needed control strategies, specifically designed for neuro motor rehabilitation and occupational therapy will be the main focus of the research activity.</p> <p>The control strategy will specifically address the objective of optimise the manipulability of the exoskeleton during assistive control tasks.</p> <p>This will increase smoothness of motion, efficacy of the rehabilitation training and usability.</p>
Methods and techniques that will be developed and used to carry out the research	Research activities foresees extensive in lab experimentation at the Rehab Technologies research line of the Istituto Italiano di Tecnologia, Genova

Educational objectives	<ul style="list-style-type: none"> - To learn scientific research methods in bioengineering, robotics and robotic rehabilitation techniques - To learn team working - To improve scientific dissemination skills
Job opportunities	<ul style="list-style-type: none"> - Rehabilitation manufacturing industries - Robotic and automation companies - Universities and research centres - Clinics and hospitals
Composition of the research group	<ul style="list-style-type: none"> - POLIMI: 1 Full Professor, 2 Associated Professors, 2 Assistant Professors www.nearlab.polimi.it - Rehab technologies (https://www.iit.it/research/lines/rehab-technologies-inail-iit-lab)
Names of the research directors	<p><i>Lorenzo de Michieli (IIT)</i> <i>Elena de Momi (POLIMI)</i></p>
Contacts	<p>lorenzo.demichieli@iit.it elena.demomi@polimi.it</p>
Additional support	
<p><u>Housing:</u> financial aid per PhD student per year (gross amount)</p>	<p><u>Foreign students* inserire solo se rilevante</u> 1st year:euros per student 2nd year..... euros per student 3rd year:euros per student</p> <p>(max number of financial aids available....., given in order of merit)</p> <p><u>Out-of-town residents (more than 80 Km out of Milano)</u> 1st year: ...euros per student 2nd year: ...euros per student 3rd year: ... euros per student</p> <p>(max number of financial aids available....., given in order of merit)</p>
<p>Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other informations</p>	
<p>IIT will provide a desk, a personal laptop and if necessary a desktop PC to the candidate during the whole PhD period</p>	