

Description form for PhD position

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- (1) University: University of Genoa
- (2) Course and Curriculum: Ingegneria Meccanica, Energetica e Gestionale (IMEG). Curriculum: MMM (Mechanics, Measurements, and Materials)
- (3) Enrolling date: 01/03/2025

Short title (6 words max)	Advanced mechatronic solutions for high performance robots
Expanded Title	Click or tap here to enter text.
Background (optional, 150 words)	Click or tap here to enter text.
Description (250 words)	This PhD project aims to push the boundaries of high-performance robotic systems by innovating on the design and integration of advanced mechanical architectures. The research will explore the possibilities given by the integration of several solutions e.g. cable-driven transmissions, hybrid parallel-serial kinematics, compliant mechanisms and additive manufacturing to cite a few. A further aspect of the project will be the development of robots capable of operating in unconventional environments, including space and underwater, where extreme conditions, such as limited gravity, high pressure, and restricted energy availability, demand innovative solutions. The project will involve a combination of theoretical modeling, hardware development, and experimental testing, with the goal of creating robotic systems that can perform complex, dynamic tasks in challenging environments.
References	Click or tap here to enter text.
Main Supervisor	Dr. Alberto Parmiggiani
Additional Supervisor(s)	Prof. Giovanni Berselli
<i>Essential expertise (please provide always 4 criteria)</i>	
i)	Applicants are expected to have background in engineering and interest in the design, fabrication and analysis of robots and mechanisms.
ii)	Effective communication skills are of the utmost importance.
iii)	Applicants shall be strongly motivated to study and design mechatronic systems.
iv)	The candidates must have also a good attitude for laboratory practice and must be willing to conduct experiments.
<i>Desirable expertise (please provide always 4 criteria)</i>	
i)	Experience in CAD-based mechanical design is a major plus.
ii)	Programming skills are also considered a plus.
iii)	Previous experience with additive manufacturing or CNC machining is a plus.
iv)	