

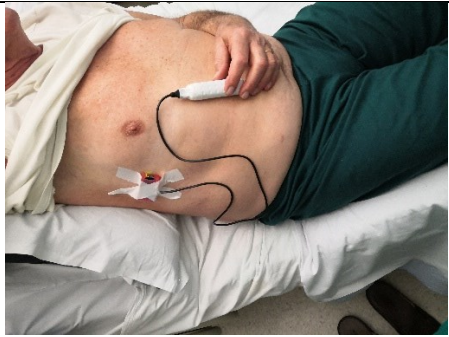
Available LARM Bachelor thesis


LARM2 webpage: <https://larm2.ing.uniroma2.it/>

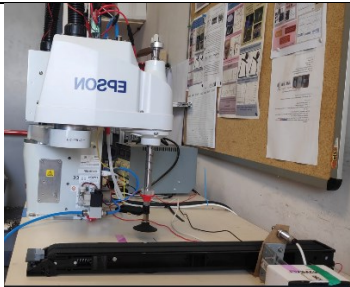
LARM2: Laboratory of Robot Mechatronics


Dept of Industrial Engineering; University of Rome Tor Vergata

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Biomechanics data from a prototype for respiration monitoring	Supervisors: Prof Marco Ceccarelli marco.ceccarelli@uniroma2.it Prof Matteo Russo matteo.russo@uniroma2.it
Subject/workplan: data analysis and filtering from testing campaign Period of work: at least 2 months Main references of background: <ol style="list-style-type: none">1. Ceccarelli M, D'Onofrio M, Ambrogi V, Russo M. An Experimental Evaluation of Respiration by Monitoring Ribcage Motion. <i>Applied Sciences</i>. 2023; 13(15):8938. https://doi.org/10.3390/app131589382. Marco Ceccarelli, Vincenzo Ambrogi, Lucrezia Puglisi, Matteo Aquilini, Dispositivo di holter ventilatorio (Ventilatory holter device), n. 102021000008585, Italy, 7/4/2021	

Test activity with a prototype for motion assistance of leg or arm	Supervisors: Prof Marco Ceccarelli marco.ceccarelli@uniroma2.it Prof Matteo Russo matteo.russo@uniroma2.it
Subject/workplan: Assembly and testing of a prototype for lab testing Period of work: at least 2 months Main references of background: <ol style="list-style-type: none">1. Ceccarelli, M.; Riabtsev, M.; Fort, A.; Russo, M.; Laribi, M.A.; Urizar, M. Design and Experimental Characterization of L-CADEL v2, an Assistive Device for Elbow Motion. <i>Sensors</i> 2021, 21, 5149. https://doi.org/10.3390/s211551492. Venkata Sai Prathyush, I.; Ceccarelli, M.; Russo, M. Control Design for CABLEankle, a Cable Driven Manipulator for Ankle Motion Assistance. <i>Actuators</i> 2022, 11, 63. https://doi.org/10.3390/act11020063	

<p>Programming an industrial/service -like manipulation with SCARA robot EPSON</p>	<p>Supervisors: Prof Marco Ceccarelli marco.ceccarelli@uniroma2.it Prof Matteo Russo matteo.russo@uniroma2.it</p>
<p>Subject/workplan: Design, programming and running of manipulation with SCARA robot EPSON for lab testing Period of work: at least 2 months Main references of background:</p> <ol style="list-style-type: none"> 1. Ceccarelli M., "A Manipulation Analysis for Robot Programming", Int. Journal Robotica, 1999, Vol.17, pp.529-541. 2. Epson, User's manual for Epson-SCARA-T3, 2021 	

<p>Technical-Historical analysis of a machine or a mechanism</p>	<p>Supervisors: Prof Marco Ceccarelli marco.ceccarelli@uniroma2.it Prof Matteo Russo matteo.russo@uniroma2.it</p>
<p>Subject/workplan: Historical evolution and performance analysis of a machine or mechanism of interest Period of work: at least 2 months Main references of background:</p> <ol style="list-style-type: none"> 1. Irakoze V., Marco Ceccarelli M., and Russo M., Historical and Technical Analysis of Harmonic Drive Gear Design, in: Multibody Mechatronic Systems - MuSMe 2021, MMS 110, Springer Nature Switzerland AG 2022, Cham, pp. 46–55, 2022. https://doi.org/10.1007/978-3-030-88751-3_5 2. Ceccarelli, M.; Cocconcelli, M. Italian Historical Developments of Teaching and Museum Valorization of Mechanism Models. Machines 2022, 10(8), 628; https://doi.org/10.3390/machines10080628. 3. Russo, Matteo, and Jose A. Robles-Linares. "A Brief History of Piano Action Mechanisms." Advances in Historical Studies 9.05 (2020): 312. 	

<p>Performance analysis of a machine or a mechanism</p>	<p>Supervisors: Prof Marco Ceccarelli marco.ceccarelli@uniroma2.it Prof Matteo Russo matteo.russo@uniroma2.it</p>
<p>Subject/workplan: design characterization and performance analysis of a machine or mechanism of interest via simulation or prototype Period of work: at least 2 months Main references of background:</p> <ol style="list-style-type: none"> 1. Matteo Russo and Marco Ceccarelli, Design and simulation of a parallel-serial LARMbot arm, in: New advances in Mechanism and Machine Science – Proceedings of SYROM 2017, (I. Doroftei et .a. Eds.), pp. 379-386, Springer, Cham, 2018. http://doi.org/10.1007/978-3-319-79111-1_38. 2. Titov A. and Ceccarelli M., L-CaPaMan Design and Performance Analysis, in M. Rackov et al. (eds.), Machine and Industrial Design in Mechanical Engineering, , Springer Nature Switzerland AG 2022, Cham, p. 569 – 576. https://doi.org/10.1007/978-3-030-88465-9_5 	