

PERSONAL INFORMATION	<p data-bbox="507 237 871 286">Giovanni Mottola</p> 
	<p data-bbox="507 327 957 365">City of birth: Bologna (BO), Italia</p> <p data-bbox="507 365 943 400">Mail: giovanni.mottola@unige.it</p> <p data-bbox="507 400 766 436">Citizenship: Italian</p> <p data-bbox="507 481 1267 517">Website: https://rubrica.unige.it/personale/UkFGWV9h</p>
CURRENT POSITION	University of Genoa
01/03/2023 – present	<p data-bbox="507 667 1106 707">Junior assistant professor (fixed-term)</p> <p data-bbox="507 734 1406 813">DIBRIS - Department of Informatics, Bioengineering, Robotics and Systems Engineering, SSD ING-INF/05</p> <p data-bbox="507 846 1445 916">Research topic: Smart drones and sensors for port inspection and monitoring (within project RAISE)</p>
PREVIOUS EXPERIENCE	
16/03/2020 – 28/02/2023	<p data-bbox="507 1055 863 1095">Contract researcher</p> <p data-bbox="507 1099 1401 1178">Department of Sciences and Methods for Engineering (DISMI) University of Modena and Reggio Emilia (SSD ING IND/13)</p> <p data-bbox="507 1182 1382 1218">Research topic: Algorithms for diagnosis of hydraulic systems</p> <p data-bbox="507 1223 1066 1258">Industrial partner: GB ServiceLab S.r.l.</p>
01/02/2019 – 31/01/2020	<p data-bbox="507 1285 863 1326">Contract researcher</p> <p data-bbox="507 1330 1465 1366">Alma Mater Studiorum – University of Bologna (SSD ING-IND/13)</p> <p data-bbox="507 1370 1355 1406">Research topic: Analysis and dimensioning of gear reducers</p> <p data-bbox="507 1411 1090 1447">Industrial partner: Sampingranaggi S.r.l.</p>
01/11/2015 – 29/03/2019	<p data-bbox="507 1471 735 1512">PhD student</p> <p data-bbox="507 1516 1465 1552">Alma Mater Studiorum – University of Bologna (SSD ING-IND/13)</p> <p data-bbox="507 1556 1453 1592">Research topic: Dynamics of Cable-driven parallel robots (CDPRs)</p> <p data-bbox="507 1597 1497 1675">Thesis title: Dynamically Feasible Trajectories of Fully-Constrained Cable-Suspended Parallel Robots Final grade: honors</p>
01/05/2015 – 31/10/2015	<p data-bbox="507 1702 863 1742">Contract researcher</p> <p data-bbox="507 1747 1465 1783">Alma Mater Studiorum – University of Bologna (SSD ING-IND/13)</p> <p data-bbox="507 1787 1406 1865">Research topic: Automated systems for opening and closing of oven and dishwasher doors</p> <p data-bbox="507 1870 1027 1906">Industrial partner: Nuova Star S.p.a.</p>

EDUCATION AND TRAINING																																			
28/08/2012 – 17/03/2015	Master's degree in Mechanical Engineering 110/110 (hon.) Alma mater: University of Bologna Industrial partner: IMAS.p.A. Title: Electromechanical modeling of an automated capsule filling machine																																		
	Bachelor's degree in Mechanical Engineering 100/110 Alma mater: University of Bologna Title: FEM structural analysis of a component for a fatigue testing machine with Aster/Salomè																																		
PERSONAL SKILLS																																			
Mother tongue	Italian																																		
Other languages	<table border="1"> <thead> <tr> <th colspan="2">UNDERSTANDING</th> <th colspan="2">SPEAKING</th> <th>WRITING</th> </tr> <tr> <th>Listening</th> <th>Reading</th> <th>Interaction</th> <th>Production</th> <th></th> </tr> </thead> <tbody> <tr> <td>English</td> <td>C1</td> <td>C1</td> <td>C1</td> <td>C1</td> <td>C1</td> </tr> <tr> <td colspan="6">CILTA certification (University of Bologna language courses)</td> </tr> <tr> <td>French</td> <td>A2</td> <td>A2</td> <td>A2</td> <td>A2</td> <td>A2</td> </tr> <tr> <td colspan="6">DELF certification (A2 level)</td> </tr> </tbody> </table>	UNDERSTANDING		SPEAKING		WRITING	Listening	Reading	Interaction	Production		English	C1	C1	C1	C1	C1	CILTA certification (University of Bologna language courses)						French	A2	A2	A2	A2	A2	DELF certification (A2 level)					
	UNDERSTANDING		SPEAKING		WRITING																														
Listening	Reading	Interaction	Production																																
English	C1	C1	C1	C1	C1																														
CILTA certification (University of Bologna language courses)																																			
French	A2	A2	A2	A2	A2																														
DELF certification (A2 level)																																			
Job-related skills	Experience with CAD software as SolidEdge, SolidWorks, Inventor e CREO (the latter especially with the Mechanism module for multibody simulation), mechatronics simulation (AMESim, Simulink), CAM (Cimatron), FEM (ANSYS, Salomè-Meca), di multibody simulation (ADAMS /ProjectChrono), robot control (RTLab, ROS) and gear dimensioning (KISSsoft).																																		
Digital competence	Advanced command of MS Office suite. Advanced command of MATLAB /Mathematica/LabVIEW. Programming experience with Python, C, C++ e Fortran. Advanced command of LaTeX.																																		

OTHER ACTIVITIES	
Teaching	<p>Tutor for course "MECHANICS OF ROBOTS M" (c. 34303, SSD ING-IND/13) for Master's degree courses in Automation Engineering and in Mechanical Engineering (A.Y. 2015/2016), at University of Bologna (30 hours)</p> <p>Tutor for course "MECHANICS OF MACHINES T-A" (c. 28661, SSD ING-IND/13) for Bachelors' course in Management Engineering (A.A. 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021 and 2021/2022), at University of Bologna (20 hours)</p> <p>Contract lecturer for the course "FUNDAMENTALS OF MECHANICS OF MACHINES T-2 (O-Z) (Module 2)" (c. 28523, SSD ING-IND/13) for Bachelor's course in Automation Engineering (A.A. 2020/2021 and 2021/2022), at University of Bologna (40 hours)</p> <p>Teaching assignment at the "CIS - School for Enterprise Management" group (Reggio Emilia), plan financed by Fondimpresa, for course "Predictive maintenance: structured approach to machine maintenance" (code 2697655), 10 hours (March to June 2022)</p>
Invited seminars	<p>Seminar on own research work (invited by Prof. Damiano Zanotto) at Stevens Institute of Technology (Hoboken, USA), 10/11/2017</p> <p>Seminar on own research work (invited by Prof. Sunil Agrawal) at Columbia University (New York, USA), 15/11/2017</p> <p>Seminar on own research work (invited by Prof. Giulio Sandini) at Italian Institute of Technology (Genoa, Italy), 06/05/2019</p> <p>Seminar on own research work (invited by REI) at Italian Institute of Technology (Genoa, Italy), 06/05/2019</p> <p>Seminar on own research work (invited by Fondazione REI and Club Meccatronica) at Tecnopolo di Reggio Emilia (Italy), 01/10/2020</p> <p>Seminar on own research work (invited by "Associazione Clust-ER Meccatronica e Motoristica") at Dallara Academy (Varano de' Melegari, Italy), 09/07/2021</p>
Periods abroad	<p>Research stay (during PhD) at the "Laboratoire de Robotique" of Université Laval (Québec, Canada) from 30/07/2017 to 22/02/2018, under the supervision of Prof. Clément Gosselin.</p>
Supervisions	<p>Supervision of PhD student (Deng Lin) from Zhejiang Sci-Tech University (People's Republic of China), from 15/05/2019 to 17/06/2020, at Alma Mater Studiorum – University of Bologna</p>

<p>Organization or participation to research groups</p>	<ul style="list-style-type: none"> ▪ Project “Portable measurement and monitoring device for predictive maintenance of hydraulic pumps”, in partnership with GB ServiceLab S.r.l. of Reggio Emilia (since 16/03/2020), selected for the “Tech reports” category of the “Technical Novelty Challenge”, within the EIMA 2021 trade show (with presentation of selected projects at dedicated area), Europe's leading agriculture/gardening technology show; Bologna, 10/19/2021. ▪ Research in collaboration with MiniMotor S.p.a. and Emmegi S.p.a., for vibration resistance analysis of a motor for an automatic machine according to standards EN 60068 and 61800 (06/2022). ▪ Research in collaboration with Tecomec S.r.l. for analysis and optimization of the design of brush-cutting machine heads to reduce the vibration level, with development of measurement software (in LabVIEW) according to standards EN ISO 20643 and 5349. ▪ Collaboration in drafting FAR 2021 proposal for purchase of “SignalStar Vector” equipment, receiving a grant from the University of Modena and Reggio Emilia for € 18190 (participation in research projects eligible for funding based on University competitive calls). ▪ Designing educational and outreach material for European Researchers' Night 2022, with presentation in front of general public.
<p>Meetings and congresses</p>	<ul style="list-style-type: none"> ▪ Speaker at the “Third International Conference on Cable-Driven Parallel Robots” (CableCon2017), 02-04/08/2017, Québec City (Canada). ▪ Speaker at “XI giornata di studio Ettore Funaioli”, Bologna (21 /07/2017; proceedings in book, ISBN 978-88-9385-077-3, SSD ING-IND/13). ▪ Speaker at “XII giornata di studio Ettore Funaioli”, Bologna (20 /07/2018; proceedings in book, ISBN 978-88-9385-140-4, SSD ING-IND/13). ▪ Speaker at IEEE-CYBER 2019 congress, Suzhou (People's Republic of China, 07/29/08-02/08/2019). ▪ Speaker at IFIT 2020 conference, Naples (Italy, 09 - 11/09/2020; online conference, sponsored by IFToMM ITALY). ▪ Speaker at Romansy 2020 congress, Sapporo (Japan, 20 - 24 / 09 / 2020; online conference). ▪ Speaker at “XIV giornata di studio Ettore Funaioli”, Bologna (15/07/2022, SSD ING-IND/13). ▪ Speaker at ISMA 2022 congress, Leuven (Belgium, 12 - 14 / 09 / 2022, in-person conference).

<p>Awards</p>	<ul style="list-style-type: none"> ▪ Leonardo Prize 2015 for the best national thesis on “Development of mechatronic solutions for power transmission in industrial applications”, with award ceremony at Quirinale Palace with the President of the Italian Republic (07/03/2016) and the ownership of the company sponsoring the prize (Bonfiglioli S.r.l.); cash prize of €3000. ▪ “Marco Polo” scholarship (University of Bologna, 2017/2018) for travel and accommodation expenses during research stay in Québec, Canada. ▪ “Best Student Paper Award” at IEEE-CYBER 2019 conference, Suzhou (People's Republic of China, 29/07-02/08/2019). ▪ “Young Delegates Program” grant for participation at Romansy 2020 conference, Sapporo (Japan, 9/20/24/2020; online conference). ▪ Gold best student Paper Award at IFIT 2020 conference, Naples (Italy, 09-11/09/2020; online conference). ▪ Gold best student Paper Award at the IFToMM HMM2021 conference, Jaén (Spain, 28-30/04/2022).
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PUBLICATIONS

1. G. **Mottola**, C. Gosselin and M. Carricato, “*Dynamically-Feasible Elliptical Trajectories for Fully Constrained 3-DOF Cable-Suspended Parallel Robots*”, in *Cable-Driven Parallel Robots*, Springer, Québec, Canada, 2018, pp. 219-230 (conference paper).
 2. G. **Mottola**, C. Gosselin and M. Carricato, “*Dynamically Feasible Periodic Trajectories for Generic Spatial Three-Degree-of-Freedom Cable-Suspended Parallel Robots*”, *ASME Journal of Mechanisms and Robotics*, 10 (3), 2018 (journal paper).
 3. G. **Mottola**, C. Gosselin and M. Carricato, “*Dynamically Feasible Motions of a Spatial Purely-Translational Cable-Suspended Parallel Robot*”, *Mech. Mach. Theory*, 132, 2019 (journal paper).
 4. G. **Mottola**, C. Gosselin and M. Carricato, “*Effect of Actuation Errors on a Purely-Translational Spatial Cable-Driven Parallel Robot*”, *IEEE-CYBER 2019 (P.R.C; conference paper)*.
 5. G. **Mottola** (2019). “*Dynamically Feasible Trajectories of Fully-Constrained Cable-Suspended Parallel Robots*” (PhD thesis defended at Alma Mater Studiorum – University of Bologna).
 6. M. Bertelli, G. **Mottola**, M. Carati and M. Carricato, “*Analisi dinamica di un meccanismo a ginocchiera per processo di stampaggio*”, *A&C. Analisi e Calcolo*, 100, 2020 (journal paper).
 7. D. Lin, G. **Mottola**, M. Carricato, X. Jiang and Q. Li, “*Dynamically-Feasible Trajectories for a Cable-Suspended Robot Performing Throwing Operations*”, *ROMANSY 2020 (Japan; conference paper)*.
 8. T. Marchi, G. **Mottola**, J. M. Porta, F. Thomas and M. Carricato, “*Position Analysis of a Class of n-RRR Planar Parallel Robots*”, *IFIT 2020 (Italy; conference paper)*.
 9. D. Lin, G. **Mottola**, M. Carricato and X. Jiang, “*Modeling and Control of a Cable-Suspended Sling-Like Parallel Robot for Throwing Operations*”, *Applied Sciences*, 2020 (journal paper).
 10. T. Marchi, G. **Mottola**, J. M. Porta, F. Thomas and M. Carricato, “*Position and Singularity Analysis of a Class of Planar Parallel Manipulators with a Reconfigurable End-Effector*”, *Machines*, 9 (1), 2021 (journal paper).
 11. G. **Mottola**, M. Cocconcelli, R. Rubini and M. Carricato, “*Gravity Balancing of Parallel Robots by Constant-Force Generators*”, *Gravity Compensation in Robotics (Springer, 2021, ed. V. Arakelian, series “Mechanisms and Machine Science”, ISBN 978-3-030-95750-6; book chapter)*.
 12. G. **Mottola** and M. Cocconcelli, “*Nomograms: An Old Tool with New Applications*”, *HMM2021 (Spain; conference paper)*.
 13. E. Idà, F. Nanetti and G. **Mottola**, “*An Alternative Parallel Mechanism for Horizontal Positioning of a Nozzle in an FDM 3D Printer*”, *Machines*, 10 (7), 2022 (journal paper).
 14. P. Grosso, G. Massaccesi, J. Cavalaglio Camargo Molano, G. **Mottola** and D. Borghi, “*Signal model of a cycloidal drive for diagnostic purposes*”, *ISMA 2022 (Belgium; conference paper)*.
 15. M. Strozzi, P. Grosso, G. **Mottola** and R. Rubini, “*Reliability of a resistance spot welding process based on characteristics parameters*”, *ISMA 2022 (Belgium; conference paper)*.
 16. G. **Mottola**, P. Grosso, C. Fonte, M. Strozzi, R. Rubini and M. Cocconcelli, “*Modal analysis and condition monitoring for an electric motor through MEMS accelerometers*”, *ISMA 2022 (Belgium; conference paper)*.
 17. G. **Mottola** and M. Cocconcelli, “*Nomograms in the history and education of machine mechanics*”, *Foundations of Science*, 2023 (journal paper).
 18. M. Cocconcelli, C. Fonte, P. Grosso, G. **Mottola**, M. Strozzi and R. Rubini, “*A European Researchers’ Night project on mechanical vibrations for high school students*”, *ISEMMS 2021 (Spain; conf. paper)*.
 19. D. Lin and G. **Mottola**, “*Dynamic launch trajectory planning of a cable-suspended translational parallel robot using point-to-point motions*”, *Machines*, 11 (2), 2023 (journal paper)
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ADDITIONAL INFORMATION

<p>Projects Activities Recognition</p>	<ul style="list-style-type: none">▪ Internship (6 months) in IMA Active S.p.A. Collaborations with ILAPAK and HPE-COXA.▪ Qualified as a professional engineer in Italy (Industrial Sector – section B – Bologna chapter) since 2017, having qualified in 2015, first exam session (grade 225/240).▪ Co-advisor of 27 bachelor’s and master’s theses.▪ Reviewer for journals of high impact and scientific profile (J. of Mechanisms and Robotics, J. of Mechanical Design, IEEE Robotics and Automation Letters, Mechanism and Machine Theory, Advances in Mechanical Engineering, Robotics, Measurement, J. of Mechanical Engineering Science, Applied Sciences, Sensors, Robotics, Machines, Mechanics, IEEE Transactions on Robotics, J. of Sound and Vibration, Shock and Vibration) and conferences (CableCon, IFIT, ICRA).▪ Member of the reviewer board for the journal Machines (since 07/01/2021).▪ Co-founder of the PhD Students’ Association of Bologna and PhD students’ representative.▪ Strong experience on intellectual property; certified training in forensic engineering.▪ Doctoral dissertation selected for publication by “Bononia University Press”.
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Place: Genova

Date: 04/05/2023