



Curriculum Vitae Europass



Personal Information

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Date of birth 12-04-1986
Nationality Italian
Gender Male

Education and training

Date From: January 2013 to: March 2016
Title PhD at LARM-DICeM, University of Cassino under the supervision of Prof. Marco Ceccarelli
Main activities and responsibilities LabVIEW software development and testing, SolidWorks Design and Simulation, MSC ADAMS Simulation, Assembly of measurement, electronic and mechanic systems
Thesis: “Design, Construction And Experimental Validation Of Cauto, CAssino hUmanoid TOrso”
Supervisor: Prof. Marco Ceccarelli
Sector Robotics, Mechanics
Date From: 13 July 2014 to: 20 July 2014
Title Summer School on Micro and Macro Mechanisms Design in Mechatronics and Robotics, Universitatea Politehnica Timișoara, Romania

Main activities and responsibilities	The summer school addresses to PhD students, young researchers or specialists working in micro and macro mechanisms design used in robotics and mechatronics and who want to broaden their methodological skills.
	<p>The summer school has comprised the following topics:</p> <ul style="list-style-type: none"> • Walking machines and their biological inspirations; • Mechanisms design used in mechatronic applications; • Machine design and error compensation for precise machine system; • Design of bolted joint and prevention against its loose; • Mechanism designs for robots: structures, performance, and applications; • Analysis, simulation and synthesis of planar linkages; • Developments of Gearless Reducers with Rolling Elements; • Motion Planning Approach of a Multi-arm Robot for Flexible Material Operations.
Sector	Design, Robotics, Mechanisms, Mechatronics
Date	From: October 2013 to: May 2014
Title	Reseach period at Intelligent Systems Centre (IntelliSys), Nanyang Technological University, Singapore
Main activities and responsibilities	Human-like Torso Mechanism based on Parallel Mechanisms development, IMU Sensors programming, CAD Model design and Testing, FEM Analysis, Rapid Prototyping
	Supervisor: Prof. I-Ming Chen
Sector	Robotics, Mechanics
Date	January 2013
Title	Professional practice examination for Engineering license (Sector A)
Name and type of organization providing education and training	University of Cassino and Southern Lazio
Date	From: May 2011 to: March 2012 (Master Thesis Dual Degree)
Title	Dual Degree in Mechanical Engineering at Panamerican University campus Ciudad de México – México D.F. Carrying out, in the final year, the experimental course to obtain a double degree in agreement with the University of Cassino (FR)
	Grade: 110/110
	Thesis: “Static and dynamic balancing of a parallel manipulator”
	Supervisors: Marco Ceccarelli (University of Cassino) Mario Acevedo Alvarado (Panamerican University)

Principal subjects/occupational skills acquired	At University of Cassino and of the Southern Lazio: Innovative technologies for production, Robot and automated system, Drives for automation, Instrumentation and measurement automation, Quality management, Industrial Logistics, Reliability and Safety. At Panamerican University: Integrated business management / company systematic approach, Control Systems for robotics, Product Design/Product and Process design, Advanced mechatronic design, Artificial Intelligence for automation, Research Seminar, Thesis and Project development.
Name and type of organization providing education and training	University of Cassino and Southern Lazio and Panamerican University
National classification level	Master Degree
Date	From: October 2006 to: April 2010
Title	Degree in Mechanical Engineering Grade: 95/110 Thesis: "Feasibility study of an exoskeleton for rehabilitation of the human hand" Supervisors: Giuseppe Carbone Marco Ceccarelli
Principal subjects/occupational skills acquired	- Basic training: Calculus, Physics, Chemistry, Fundamentals of computer science. -Core subjects: Drawing Machines, Technologies Applied Chemistry, Metallurgy, Structural Mechanics, Thermodynamics, Applied Thermodynamics, Machines, Energy Systems 1, Fundamentals of Mechanical Metrology, Fundamentals of applied mechanics, Mechanical Technology I, The Industrial , Fundamentals of machine construction. Activity-related training/supplementary: Fluid mechanics, Mechanical and thermal control systems, Electrical engineering. -Elective: Mechanics of industrial robots, Electrical drives for automation, Laboratory of Electric Drives, Mechanic of automatic machinery, Instrumentation and measurement for automation.
Name and type of organization providing education and training	University of Cassino
National classification level	Bachelor Degree
Date	July 2006
Title	High School Diploma
Principal subjects/occupational skills acquired	Mathematics, Physics, Biology, Chemistry, Geography and Astronomical Sciences, Italian Language and Literature, English Language and Literature, Latin Language and Literature, History, Philosophy, History of Art.
Name and type of organization providing education and training	Liceo Scientifico "F. Severi" di Frosinone
National classification level	High School Diploma

Professional experience

Date	From: August 2017– In Progress
Job	Postdoc research project: Innovative development of robotic systems for rehabilitation and assisting in healthy aging at the Technical University of Cluj-Napoca
Main activities and responsibilities	Agewell, Cod: SMIS - p 37 215, approaches an open problem in the healthcare of the aging population of Europe, committing to provide a viable solution of the acute therapy for stroke patients. The implementation team aims to deliver a solution that can be extended towards rehabilitation training in the later phases of the post-stroke therapy/rehabilitation as well as an exercise device for healthy aging of the elderly population.
Sector	Engineering - Biomedical engineering
Date	From: March 2016 – May 2017
Job	Postdoc research project: Design and experimental validation of mobile robotic platform structure and operation activities for cultural heritage at the University of Cassino and Southern Latium
Main activities and responsibilities	Study of existing mobile platforms and application areas, modeling of a preliminary mobile platform, analyzing the operation through dynamic simulations, validation of the platform through laboratory experiences, design and manufacture of the robot platform structure, implementation of the platform control, testing of the designed prototype in laboratory and application environment.
Sector	Mechanics of Machinery and Robots (ING - IND / 13)
Date	From: June 2014 to: July 2014
Job	Collaboration with Eurolink Srl company located in Frosinone, Italy
Main activities and responsibilities	Consulting and implementation of a committed work concerning the development of a project in the aerospace field for the customer Iacobucci HF Aerospace SpA. Documents and parameters necessary for the production of the model were computed and delivered. The design was carried out in CATIA environment.
Sector	CAD Modelling
Date	From: September 2012 to: July 2013
Job	Collaboration in the project C0242S10-CIG 05317226DE commissioned by Sogin SpA for the development and implementation of a robot prototype capable of walking in tubes of nuclear power plants and cut the inside via oxy-fuel cutting.
Main activities and responsibilities	Development and testing of control programs in LabVIEW, Design and Simulation with SolidWorks, FEM simulation of temperature during the cutting process. Assembly of measurement, electronic and mechanic systems
Sector	Robotics, Mechanics
Date	From: September 2012 to: May 2013
Job	Project related contract with the University of Cassino and Southern Lazio for the European project “MAGDRIVE Magnetic-Superconductor Cryogenic Non-contact Harmonic Drive”. In collaboration with Carlos III University of Madrid
Main activities and responsibilities	LabVIEW software development and testing, SolidWorks Design and Simulation, MSC ADAMS Simulation, Assembly of measurement, electronic and mechanic systems

Sector Robotics, Mechanics

Date From: My 2012 a: June 2017

Job Collaboration contracts with Eurolink S.r.l. in Frosinone

Main activities and responsibilities Teaching on the following courses:

- Basic and transversal skills addressed to people employed with a professional apprenticeship contract;
- Business communication technician addressed to people in Integration and / or Mobility;
- EDP operator addressed to persons in Integration and / or Mobility;
- Design elements and installation techniques for photovoltaic solar systems for people in Integration and / or Mobility;
- Specialization course in 3D modelling and animation using Catia software
- Youth Guarantee project: specialization course in 3D modelling and animation using Catia software

Sector Classroom Tutor:

- Specialization course in 3D modelling and animation using Catia software - Teacher: Eng. Sandro Lupattelli.

Design, Mechanics, Information technology

Date From: July 2005 to: September 2005

Job Internship training in electronics, office machines and personal computers

Main activities and responsibilities Use and installation of personal computers. Electronic parts assembly and repair

Sector Sales and Service Private Company

Personal skills and competences

Native Language **Italian**

Other languages

Self-assessment
European Level (*)

English

Spanish

Comprehension				Speaking				Writing	
Listening		Reading		Interaction		Construction			
C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User
C2	Proficient User	C2	Proficient User	C2	Proficient User	C2	Proficient User	C2	Proficient User

(*)Common European Framework of Reference for Languages

Certification	Trinity College of London (grade 10) and Universidad Panamericana
Social skills	Ability to adapt to multicultural environments and good team spirit, skills acquired in the university by conducting several group projects in which it was essential the collaboration between different teams and with different working schedules; Good in transmitting knowledge thanks to the mentoring activities carried out during the training.
Organizational skills	Good attitude to manage projects and teams developed in these contexts
Technical skills	Excellent theoretical and practical knowledge of instrumentation for measuring mechanical, electrical and electronic variables: oscilloscope, function generator, spectrum analyser, multimeter, acquired during the studies; Ability in the use and programming of PLC systems; Ability in the use and programming industrial robots; Ability to design and to implement models and complex systems using the technology of Rapid Prototyping learned through the use of 3D printers while working on the thesis project at the laboratories of the Universidad Panamericana.
Computer skills	<ul style="list-style-type: none"> • Good knowledge of Microsoft, Apple and Linux and its applications; • Good knowledge of the programs Office TM (Word TM, Excel TM and PowerPoint TM); • Good ability to browse the Internet; • Knowledge of design software for 2D and 3D CAD: AutoCAD, ThinkDesign, SolidWorks, Pro/ENGINEER CATIA; • Matlab and LadderDiagram and SFC for PLC; • Knowledge of programs for the interfacing of laboratory instruments such as LabVIEW; • Good knowledge of computer architecture and Operating systems; • Good knowledge of programming languages such as: Fortran, Pascal, C++ (basic level), Java, Basic, HTML, developed in the University.
Driving license	AB

1. Acevedo M., Ceccarelli M., Carbone G., Cafolla D., "Complete dynamic balancing of a 3-DOF spatial parallel mechanisms by the application of counter-rotary counterweights", EUROMECH Colloquium 524, University of Twente, Netherlands, 2012.
2. Cafolla D., Carbone G., "A study of feasibility of a human finger exoskeleton", Service Orientation in Holonic and Multi-Agent Manufacturing and Robotics, Studies in Computational Intelligence, Springer, Vol.544, pp. 355-364, 2014.
3. Cafolla D., Tedeschi F., Carbone G., "Design and simulation on Cassino Hexapod II", in Proceedings of the 3rd IFToMM International Symposium on Robotics and Mechatronics (ISRM 2013) Singapore, 2013, pp. 3-12.
4. Tedeschi, F., Cafolla, D., Carbone, G., "Design and operation of Cassino Hexapod II", in Proceedings of RAAD 2013, 22th International Workshop on Robotics in Alpe-Adria-Danube Region, Portoroz, Slovenia, 2013, pp. 94-101.
5. Cafolla D., Acevedo M., Ceccarelli M., "Static and Dynamic Balancing of a Parallel Manipulator", Edizioni Accademiche Italiane, ISBN: 978-3-639-65873-6, 2014.
6. Cafolla D., Ceccarelli M., I-Ming C., "Characterization of human Torso behaviour", in Proceedings of the 3rd IFToMM Asian Conference on Mechanism and Machine Science (Asian MMS 2014) Tianjin, China, 2014, paper BM& MWD-4.
7. Cafolla D. , Ceccarelli M. , "Design and simulation of Humanoid Spine", New Trends in Mechanisms and Machine Science, Springer Dordrecht, 2014, pp.585-593. DOI 10.1007/978-3-319-09411-3_62.
8. Cafolla D., Ceccarelli M., "Design and FEM Analysis of a Novel Humanoid Torso", Multibody Mechatronic Systems, Mechanisms and Machine Science 25, Springer, Dordrecht, pp. 477- 488, 2014, DOI 10.1007/978-3-319-09858-6_45,.
9. Cafolla D. and Ceccarelli M., "Experimental Inspiration and Rapid Prototyping of a Novel Humanoid Torso", in Robotics and Mechatronics, Mechanisms and Machine Science Vol. 37, Springer Dordrecht, 2016, pp.65-74. DOI 10.1007/978-3-319-22368-1_7.
10. Cafolla D. and Ceccarelli M., "Design and validation of a PKM Structure for a Humanoid Torso", in Proceedings of The 14th IFToMM World Congress, Taipei, Taiwan, (DOI) 10.6567/IFToMM.14TH.WC.OS13.122, 2015.
11. Cafolla D., Carbone G., Ceccarelli M., "Balancing of a 3-DOFs Parallel Manipulator", Dynamic Balancing of Mechanisms and Synthesizing of Parallel Robots. Springer, Dordrecht, (DOI) 10.1007/978-3-319-17683-3_8, pp. 173-191, 2015. (Chapter 8)
12. Ceccarelli M., Carbone G., Cafolla D. and Wang M.F., "How to use 3D printing for feasibility check of mechanism design", In Advances in Robot Design and Intelligent Control, pp. 307-315, Springer International Publishing, 2015.
13. Cafolla D., Wang M.F., Carbone G. and Ceccarelli M., "LARMbot: a new humanoid robot with parallel mechanisms", Robot Design, Dynamics and Control: Proceedings of ROMANSY 2016, 21st CISM-IFToMM Symposium on Robot Design, Dynamics, and Control, pp. 275-284, Springer International Publishing, 2016.
14. Ceccarelli M., Cafolla D., Wang M.F., and Carbone G., "An Overview of the Ongoing Humanoid Robot Project LARMbot", IN: L. Alboul et al. (Eds.): TAROS 2016, LNAI 9716, Springer International Publishing Switzerland 2016, (DOI) 10.1007/978-3-319-40379-3_6, 2016, pp. 53–64.
15. Chaparro-Rico B.D.M, Castillo-Castañeda E., Ceccarelli M., Cafolla D., "Design and Test of Therapy Exercise for Human Arms", in Proceedings of MESROB2016, Medical and Service Robotics 2016, Paper ID: 3, 2016.
16. Leal-Naranjo J.A., Ceccarelli M., Torres-San Miguel C.R., Cafolla D., "An experimental characterization of human arm motion ", in Proceedings of MESROB2016, Medical and Service Robotics 2016, Paper ID: 4, 2016.
17. Olinski M., Ceccarelli M., Cafolla, D. and Gronowicz A., "An Experimental Characterization of Human Knee Joint Motion Capabilities", In New Trends in Mechanism and Machine Science, Springer International Publishing, 2017, pp. 411-419, (DOI)10.1007/978-3-319-44156-6_42.
18. Chaparro-Rico B.D.M, Cafolla D., Ceccarelli M., Castillo-Castañeda E., "Design and Simulation of an Assisting Mechanism for Arm Exercises", Advances in Italian Mechanism Science. Springer International Publishing, 2017, pp. 115-123.
19. Ceccarelli M., Cafolla D., Carbone G., Russo M., Cigola M., Senatore J.L., Gallozzi A., Di Maccio R., Ferrante F., Bolici F., Supino S., Colella N., Bianchi M., Intrisano

C., Recinto G., Micheli A.P., Vistocco D., Nuccio M.R., Porcelli M., "HeritageBot Service Robot assisting in Cultural Heritage", In Robotic Computing (IRC), IEEE First International Workshop on Robotic Computing for Cultural Heritage (IRCCH 2017), Taichung City, Taiwan, pp. 440-445, 2017.

20. Ceccarelli M., Cafolla D., Russo M., Carbone G., "Design and Construction of a Demonstrative HeritageBot Platform Advances in Service and Industrial Robotics, Mechanisms and Machine Science 49, pp. 355-362, 2017.

Journals

21. Tedeschi F., Cafolla D., Carbone G., "Design and operation of Cassino Hexapod II" JOMAC International Journal of Mechanics and Control Vol. 15 N° 01, 2014, pp. 1590-8844.
22. Cafolla D., I-Ming C., Ceccarelli M., "An experimental characterization of human torso motion", Frontiers of Mechanical Engineering, Vol. 10, No. 4, (DOI) 10.1007/s11465-015-0352-z, 2015, pp. 311-325.
23. Cafolla D. and Ceccarelli M., "Design and simulation of a cable-driven vertebra-based humanoid torso", International Journal of Humanoid Robotics, Vol. 13, No. 4, (DOI) 10.1142/S0219843616500158, 2016, pp. 1650015-1-1650015-27.
24. D. Cafolla, M. Ceccarelli, M. F. Wang, G. Carbone, "3D printing for feasibility check of mechanism design", International Journal of Mechanics and Control, ISSN: 1590-8844, Vol. 17, No. 01, 2016, pp. 3-12.
25. Russo M., Ceccarelli M., Corves B., Hüsing M., Lorenz M., Cafolla D., Carbone G., "Design and Test of a Gripper Prototype for Horticulture Products", Journal of Robotics and Computer-Integrated Manufacturing, Vol.44, 2017, pp. 266-275.
26. Esquivela E., Cafolla D., Carbone G., Ceccarelli M., Jáuregui C., Forces and defects in roll hemming", Journal of Manufacturing Processes, 2016. (submitted)
27. Cafolla D. and Ceccarelli M., "An Experimental Validation of a Novel Humanoid Torso", Robotics and Autonomous Systems, (DOI) 10.1016/j.robot.2017.02.005, <http://dx.doi.org/10.1016/j.robot.2017.02.005>, 2017.
28. Cafolla D. and Ceccarelli M., "Characteristics and Performance of CAUTO (CAssino hUmanoid TOorso) Prototype", Inventions 2017, 2(3), 17, Special Issue Advances in Mechanism Design for Robots), (DOI) 10.3390/inventions2030017, 2017.

Patents

29. Cafolla D., Ceccarelli M., Carbone G., "Mechanism for finger motion assistance", Italian Patent No. FR2013A000007, September 2013.
30. Ceccarelli M., Cafolla D., "Artificial torso for humanoid robots", Italian Patent No. 102015000032902, July 2015.
31. Ceccarelli M., Cafolla D., Giuseppe C. and Wang, M. F. "Mechanical structure of humanoid robot with parallel mechanisms", Italian Patent No. 102015000062714, October 2015.
32. Russo M., Cafolla D., and Ceccarelli M., "Device for tripod leg", Italian Patent No. 102016000097258, September 2016.
33. Ceccarelli M., Cafolla D., Matteo Russo, and Giuseppe C., "Device with legs and helices", Italian Patent No. 102016000103321, October 2016.
34. Chaparro-Rico B.D.M, Ceccarelli M., Cafolla D., Castillo-Castañeda E., "Device for arm motion assistance", Italian Patent No. 102016000107499, October 2016.

Other information

European Computer Driving License (ECDL). Maximum availability for locations, duties and working hours Interests in technology development, information technology and in robotics. Available, friendly and helpful.