



Prof. Alessandro GASPARETTO, PhD

Curriculum vitae

April 13th, 2023

Alessandro Gasparetto was born in Rovigo (Italy) on October 26th, 1968.

Education

1986: Classical High School degree.

1992: Master degree in Electronic Engineering at the University of Padua (Italy) with the maximum grade of 110/110 cum laude.

1992: qualification to the Engineering profession

1996: PhD degree in Applied Mechanics at the University of Brescia (Italy)

2003: Master degree in Mathematics at the University of Padua (Italy) with the maximum grade of 110/110 cum laude.

Academic career

1995-2000: Assistant professor of Mechanics Applied to Machines at the Faculty of Engineering of the University of Udine.

2000-2007: Associate professor of Mechanics Applied to Machines at the Faculty of Engineering of the University of Udine.

2007- to date: Full professor of Mechanics Applied to Machines at the Polytechnic Department of Engineering and Architecture of the University of Udine.

Academic appointments

2001- to date: member of the Scientific Council of the PhD course of Industrial and Information Engineering, University of Udine.

2006- 2012: Chairman of the Committee for the Internationalization of the Faculty of Engineering of the University of Udine.

2006- 2012: Delegate of the Dean of the Faculty of Engineering of the University of Udine for the management of the teaching and scientific activities in the campus of Pordenone.

2011-2016: member of the Committee for International Mobility of the University of Udine.

2013- 2016: member of the Committee for Scientific Research of the University of Udine.

2013 - 2019: Deputy Rector for Quality Assurance - University of Udine.

2013 – 2019: Chair of the Quality Presidium of the University of Udine.

2014- to date: Mentor of the Faculty of Sciences and Technologies of the Free University of Bolzano-Bozen (Italy).

2017 - to date: Coordinator of the Section of Electrical, Management and Mechanical Engineering of the the Polytechnic Department of Engineering and Architecture of the University of Udine.

2017 – to date: member of the Executive Council and of the Committee for Scientific Research of the the Polytechnic Department of Engineering and Architecture of the University of Udine.

2019 – to date: Deputy Rector for Scientific Research and Technology Transfer – University of Udine.

2019 – 2021: Chair of the Research, of the Patents and of the Spin-off Committees of the University of Udine.

2020 – to date: Deputy Chair of the Istituto di Genomica Applicata (IGA).

2021 – to date: Director of the Polytechnic Department of Engineering and Architecture of the University of Udine.

2022 – to date: member of the Scientific Council of CISM (Centre International des Sciences Mécaniques);

2022 – to date: member of the Supervisory Board of SMOCT Società Consortile Per Azioni, representing the University of Udine;

2022 – to date: member of the Council of the Doctoral School of the Polytechnic of Turin;

2022 – to date: member of the Scientific and Industrial Committee of Fiera A&T (Automation and Testing), representing the University of Udine.

Teaching appointments

Prof. Gasparetto teaches or has taught the following courses at the Faculty of Engineering and at the Polytechnic Department of Engineering and Architecture of the University of Udine:

- Mechanics of Vibrations (Master level)
- Robotics (Master level)
- Mechatronics (Master level)
- Dynamics and Vibrations (Master level)
- Fundamentals of Theoretical and Applied Mechanics (Bachelor level)
- Mechanics Applied to Machines (Bachelor level)
- Machine Safety (Master level).

Research activity and coordination of the research group

The research activity of Prof. Gasparetto has been, and is currently carried out in the following fields:

- Robotics
- Mechatronics
- Industrial Automation
- Modeling and control of mechanical systems
- Vibration control

Prof. Gasparetto is the Head of the Laboratory of Mechatronics and Robotics of the University of Udine, in which the research activity of the group led by Prof. Gasparetto is carried out.

Up to date, Prof. Gasparetto tutored more than 300 Bachelor and Master students, as well as 10 PhD students of the PhD school in Industrial and Information Engineering at the University of Udine. Moreover, he tutors and has tutored several research fellows, also in the framework of his international relations, namely:

PHD STUDENTS

Adriano Biason
Renato Vidoni
Albano Lanzutti
Paolo Boscariol
Seyed Amir Hossein Kiaeian Moosavi
Mohammad Rabiei
Erfan Shojaei Barjuei
Nicola Giovanelli
Loranzo Scalera
Federico Lozer

RESEARCH FELLOWS

Paolo Boscariol (3 years)
Ennio Saccavini (1 year)
Albano Lanzutti (1 year)
Luciano Moro (1 year)
Jelena Srnec Novak (2 years)
Giulio Trigatti (1 year)
Maurizio Antoniutti (3 months)
Dario Richiedei (3 months)
Luca Baldessin (3 months)
Carlo Savorgnan (3 months)
Renato Vidoni (1 year)
Albano Lanzutti (1 year)
Seyed Amir Hossein Kiaeian Moosavi (3 months)
Erfan Shojaei Barjuei (3 months)
Lorenzo Scalera (1 year)
Livio Petriccione (2 years)
Eleonora Maset (1 year)

Scientific production

Up to date, prof. Gasparetto is author of 223 scientific publications (see Appendix), namely:

- 80 papers published in international journals
- 2 papers published in Italian journals
- 121 papers published in the proceedings of international conferences
- 14 papers published in the proceedings of Italian conferences
- 5 book chapters
- 1 report.

Up to date, the bibliometric parameters of Prof. Gasparetto are the following:

- number of papers published in Scopus indexed journals = 70
- total number of citations = 2772
- h-index = 25.

(source: Scopus)

A. Gasparetto has been included in the the ranking of the top 2% most quoted and authoritative scientists in the world, published by researchers at Stanford University (<https://data.mendeley.com/datasets/btchxktzyw/2>).

Research projects

Coordinator of the research unit of the University of Udine in the following “PRIN” projects (Research Projects of National Relevance), sponsored by the Italian Ministry of the University:

PRIN 2006: “Master Slave Systems for the Active Safety of Operating Machines”

PRIN 2004: “Robotized Intra-brain Neuro-Radiosurgery”

PRIN 2001: “Robots in Medical Environments”

PRIN 1999: “Control of High-Precision Robots Employed in Medical Environments”

Coordinator of the research unit of the University of Udine in the project “Gecko Mimetic Tape as New Joint Technology” (2010-12), led by Elettra Sincrotrone Trieste and sponsored by the ESA (European Space Agency).

Scientific coordinator of the Ariadna project “Attaching mechanism and strategies inspired by the spider’s legs” (2007-08), sponsored by the ESA (European Space Agency).

Member of the project 28027-IC-5-2000-1-BE-ERASMUS-EPS-1, sponsored by the European Commission (years 2000-02), on the design of a teaching module about Machine Safety.

Member of the project “The Cultured Engineer”, sponsored by the European Commission (years 2005-07) on the design of a teaching module about the philosophy of engineering.

Member of the project “PRAXIS”, sponsored by the European Commission (years 2011-14) on the design of an excellence centre for student internships.

Coordinator of the research unit of the University of Udine in the project “Innovative fire doors” (2011-14), POR-FESR project of the Friuli Venezia Giulia region, led by Fincantieri.

Coordinator of the research unit of the University of Udine in the project “Fire panels for naval applications” (2016-18), POR-FESR project of the Friuli Venezia Giulia region, led by Fincantieri.

Coordinator of the research unit of the University of Udine in the project “New materials for fire safety in naval environments” (2018-20), POR-FESR project of the Friuli Venezia Giulia region.

Coordinator of the research unit of the University of Udine in the project “Wind Energy Propulsion Aid for Ships” (2018-21), POR-FESR project of the Friuli Venezia Giulia region.

Moreover, he achieved several research grants and contracts, with public as well as private companies. The total amount of grants achieved up to date is: **1 436 349 Euro**.

The table below reports in details all the research projects achieved by prof. Gasparetto.

Type of project	Customer	Title	Period	Amount (Euro)
Research Project of	Italian Ministry of University	RIME: Robotics In Medical Environments	2001-2003	38700

National Interest				
Contract for research activity	Panotec SpA (Castagnole, TV) - Italy	Innovative solutions for high-flexibility devices	2002	1800
Contract for research activity	Serita srl (Oderzo, TV) - Italy	Laboratory tests with vibration sensors	2004	1800
Research Project of National Interest	Italian Ministry of University	Robot for Neuro-Radiosurgery	2005-2006	28600
Contract for research activity	Anodica Trevigiana SpA (Codognè, TV - Italy)	Feasibility analysis of a robotic workcell	2005-2006	4800
Contract for research activity	Casagrande SpA (Fontanafredda, PN) - Italy	Kinematic study and implementation of a controller for a tunnel-digging machine	2005-2006	25200
Contract for research activity	Antoniolli & C. (Sacile, PN) - Italy	Design of an innovative controller for automatic gates	2005-2008	84000
Contract for research activity	Danieli Officine Meccaniche SpA (Buttrio, UD) - Italy	Design of didactic plans for engineers in China, India and Ukraine	2005-2006	4900
Contract for research activity	Savio Macchine Tessili SpA (Pordenone) - Italy	Design of didactic plans for engineers in China	2006	720
Contract for research activity	Electrolux Home Products SpA (Porcia, PN) - Italy	Design of a robotized system for automatic testing of a washing machine	2006-2007	60000
Research Project of National Interest	Italian Ministry of University	Master-slave systems for active safety of operating machines	2007-2009	30000
Contract for research activity	Canadabox Spa (Tamai, PN) - Italy	Design of an innovative device for an industrial cardboard printer	2007-2008	10800
Ariadna Project	European Space Agency (Noordwijk, The Netherlands)	Attaching mechanisms and strategies inspired by the spiders' legs	2007-2008	38000
Contract for research activity	Electrolux Home Products SpA (Porcia, PN) - Italy	HIL control for home appliances	2008-2010	96000
Contract for research activity	CMA Robotics SpA (Pradamano, UD) - Italy	Algorithms for self-programming of painting robots	2009-2010	36600
Contract for research activity	PMI snc (Fiume Veneto, PN) - Italy	Design of an innovative testing machine for brakes	2011	8400
Contract for research activity	Electrolux Home Products SpA (Porcia, PN) - Italy	Multi-agent robotic systems for maintenance of home appliances	2010-2012	120000
ESA Project	Sincrotrone Trieste SCpA (Basovizza, TS) - Italy	Gecko Mimetic Tape as New Joint Technology	2010-2012	60000
POR-FESR Project	Regioe Friuli – Venezia Giulia - Italy	Innovative fire doors	2011-2014	210000
Contract for research activity	Faim srl (Buttrio, UD) - Italy	System for the automatic counting of steel bars	2012	60000
Contract for research activity	Casagrande SpA (Fontanafredda,	System for automatic actuation of a peg-inserting machine	2012	6050

	PN) - Italy			
Contract for research activity	Casagrande SpA (Fontanafredda, PN) - Italy	System for automatic feeding in digging machines	2012	6050
Contract for research activity	Sistec srl (Sacile, PN) - Italy	Design of a system for automatic detection of defects on natural skine	2012-2013	18150
Contract for research activity	I-bedding SpA (Pavia di Udine, UD) -Italy	New systm for pressure equalization in beds	2013-2014	12200
Contract for research activity	FIRST srl (Pordenone) - Italy	Mathematic models for HIL control techniques	2014	6100
Contract for research activity	FIRST srl (Pordenone) - Italy	Innovative virtual tools for rapid design of new components	2015-2016	36600
Contract for research activity	Free University of Bolzano (BZ) - Italy	Monitoring key environmental parameters in the alpine environment involving science, technology and application	2016	12000
Contract for research activity	Huzhou Harbor Technologies Ltd. (Hangzhou, China)	Support to the presentation of the “Thousand Talents Project	2016-2017	3000
POR-FESR Project	Region Friuli – Venezia Giulia - Italy	Innovative fire panels for naval applications	2016-2018	100000
Contract for research activity	Minini srl (Cassacco, UD) - Itly	Innovation project“Future and more than”	2017	18300
Contract for research activity	CMA Robotics SpA (Pradamano, UD) - Italy	Robotized scanning system	2017-2018	36600
Contract for research activity	FIRST srl (Pordenone) - Italy	Validation of logical interfaces of personal devices	2017	6100
POR-FESR Project	Region Friuli – Venezia Giulia - Italy	Wind Energy Propulsion Aid for Ships	2018-2021	132007
POR-FESR Project	Region Friuli – Venezia Giulia - Italy	New materials for fire safety in naval environments	2018-2020	105172
Contract for research activity	Konner srl (Amaro, UD) - Italy	Development of a model to predict the “ground resonance” phenomenon in helicopters	2019	18300
TOTAL				1 436 349

Activity as a Reviewer, Advisor and Member of Societies

He is or has been a member of the Editorial Board of the journals:

“Humanoid Robotics”
“Mathematical Problems in Engineering”
“Shock and Vibration”
“Robotica”
“Applied Sciences”

He has been Guest Editor for Special Issues of some scientific journals (Robotics, Applied Sciences).

He is or has been a member of the Scientific Board of the journals:

“Journal of Engineering Science and Technology Review”
“Annals of the Faculty of Engineering of Hunedoara”
“Technical Diagnostics”.

He has served and/or serves as a reviewer for the following journals:

“Advanced Robotics”
“Advances in Engineering Software”
“Advances in Space Research”
“Applied Mathematical Modelling”
“Applied Mathematics and Computation”
“Asian Journal of Control”
“Automatica”
“Automation in Construction”
“Autosoft Journal”
“Biomedical Engineering Online”
“Biosystems Engineering”
“Computer-Aided Design”
“Computers and Electronics in Agriculture”
“Control Engineering Practice”
“Dynamics of Continuous, Discrete and Impulsive Systems”
“Engineering Optimization”
“Engineering with Computers”
“IEEE Access”
“IEEE / ASME Transactions on Mechatronics”
“IEEE Transactions on Automation Science and Engineering”
“IEEE Transactions on Control Systems Technology”
“IEEE Transactions on Cybernetics”
“IEEE Transactions on Robotics”
“IEEE Transactions on Systems, Man and Cybernetics”
“IEEE Transactions on Vehicular Technology”
“Intelligent Service Robotics”
“International Journal for Numerical Methods in Engineering”
“International Journal of Advanced Manufacturing Technology”
“International Journal of Advanced Robotic Systems”
“International Journal of Computer Applications in Technology”

“International Journal of Precision Engineering and Manufacturing”
 “International Journal of Robotics Research”
 “International Journal of Solids and Structures”
 “International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems”
 “Journal of Adhesion”
 “Journal of Advanced Robotic Systems”
 “Journal of Agricultural Science and Technology”
 “Journal of Bionic Engineering”
 “Journal of Dynamic Systems, Measurement and Control”
 “Journal of Intelligent and Robotic Systems”
 “Journal of Low Frequency Noise, Vibration and Active Control”
 “Journal of Mechanical Engineering Science”
 “Journal of Precision Engineering and Manufacturing”
 “Journal of Robotics”
 “Journal of Robotics and Computer Integrated Manufacturing”
 “Journal of Sound and Vibration”,
 “Journal of Systems and Control Engineering”
 “Journal of Systems Science and Complexity”
 “Journal of Vibration and Control”
 “Journal of Vibration Engineering and Technologies”
 “Journal of Zhejiang University-SCIENCE A”
 “Mathematical and Computer Modelling”
 “Mathematical Problems in Engineering”
 “Mechanical Systems and Signal Processing”
 “Mechanics Research Communications”
 “Meccanica”
 “Mechanism and Machine Theory”
 “Mechatronics”
 “Review of Scientific Instruments”
 “Robotica”
 “Robotics and Autonomous Systems”
 “Robotics and Biomimetics”
 “Robotics and Computer Integrated Manufacturing”
 “Scientific Research and Essay”
 “Strojniški vestnik - Journal of Mechanical Engineering”
 “Structural Engineering and Mechanics”
 “World Journal of Modeling and Simulation”

Moreover, he serves and/or has served as a reviewer for several scientific Conferences, mainly sponsored by ASME, IEEE and IFToMM.

In 2013 he received the “Certificate of excellence in reviewing” from the editorial Board of the international journal “Robotics and Computer Integrated Manufacturing”.

In 2017 he received the “Outstanding Reviewer Award” from the editorial Board of the international journal “Mechanism and Machine Theory”.

Reviewer of scientific projects on behalf of the Italian Ministry of University, and on behalf of several public and private Italian institutions (Region of Piedmont; Province of Trento, District of Mechanical Components, Region of Puglia).

Expert reviewer for the Natural Sciences and Engineering Research Council of Canada (NSERC).

Expert for the Tenure and Promotion Committee of the Simon Fraser University (Vancouver, Canada) and of the Al Bal'qa Applied University (Amman, Jordan).

Reviewer for the Ministry of Higher Education, Science and Technology of the Republic of Slovenia.

Reviewer for the Czech Science Foundation (Czech Republic).

Reviewer for the National Science Centre (Poland).

Referee of PhD thesis and member of the PhD examination board for several Universities worldwide.

Invited lectures

Invited speaker (keynote lecture) at the International Workshop on Mathematics and Algorithms for Computer-Aided Manufacturing, organized by the Chinese Academy of Sciences (Beijing, October 2011).

Invited speaker (keynote lecture) at the RICH 2012 (Robotics in Cultural Heritage) Conference (Venice, December 2012).

Invited speaker at the International Scientific and Professional Conference - POLITEHNIKA 2023 (Belgrade, Serbia, December 2023).

Book editing

Editor (with Giovanni Boschetti) of the book: “Advances in Italian Mechanism Science. Proceedings of the First International Conference of IFToMM Italy”, Volume 47 of the Series “Mechanism and Machine Science”, Springer.

Editor (with Marco Ceccarelli) of the book: “Mechanism Design for Robotics. Proceedings of the 4th IFToMM Symposium on Mechanism Design for Robotics”, Volume 66 of the Series “Mechanism and Machine Science”, Springer (2018).

Editor (with Giuseppe Carbone) of the book: “Advances in Italian Mechanism Science. Proceedings of the Second International Conference of IFToMM Italy”, Volume 68 of the Series “Mechanism and Machine Science”, Springer (2018).

Editor (with Vincenzo Niola) of the book: “Advances in Italian Mechanism Science. Proceedings of the Third International Conference of IFToMM Italy”, Volume 68 of the Series “Mechanism and Machine Science”, Springer (2020).

Editor (with Giuseppe Quaglia, Victor Petuya and Giuseppe Carbone) of the book: “Proceedings of I4SDG Workshop 2021 - IFToMM for Sustainable Development Goals”, Volume 108 of the Series “Mechanism and Machine Science”, Springer (2021).

Editor (with Vincenzo Niola, Giuseppe Carbone and Giuseppe Quaglia) of the book: “Advances in Italian Mechanism Science. Proceedings of the Fourth International Conference of IFToMM Italy”, Volume XXX of the Series “Mechanism and Machine Science”, Springer (2022).

International collaborations, invitations and awards

Cooperates with several European and extra-European Universities for research and teaching projects, such as:

- Simon Fraser University Vancouver (Canada), KU Leuven (Belgium), Universidad de Murcia (Spain), Universidad de Girona (Spain), Université des Sciences et Technologies de Lille (France), Université Paris-Est Creteil Val de Marne (France), University College Cork (Ireland), Universidade de Aveiro (Portugal), Instituto Politecnico de Porto (Portugal), Universitatea Politehnica Timisoara (Romania), University College Odisee (Belgium), Universidad del Pais Vasco (Spain), Universidad de Vigo (Spain), Universidad Politècnica de Valencia (Spain), Vilnius Gediminas Technical University (Lithuania), Bialystok Technical University (Poland), etc.

Since 1999, has taught monographic courses and seminars at the Universidad de Murcia (Spain) and at the Politehnica Timisoara (Romania).

Awards

Second place at the “2009 EUROP/EURON Robotics Technology Transfer Award” for the project “Automation and control of a tunnel digging robotic machine” (European Robotic Forum, Leuven - Belgium, April 2009).

Recipient of the “Nicola Chiari Award” for the best application in Measurement and Automation 2010), for the project “A haptic Master-Slave System for Robotized Neuro-Surgery” (NI Days, Rome, February 2010).

Recipient of the prize “NI Engineering Impact Awards 2015” for the best application in the category “Advanced Research”, for the project “Wearable system for the measurement of the reaction forces during ultra-endurance running competitions” (NI Days, Milan, March 2015).

Recipient of the “2015 Springer Award for the most active member of the IFToMM Permanent Commission on History of Mechanisms and Machine Science” (IFToMM World Congress, Taipei, October 2015).

Recipient of an Award for the paper “Anti-hedonistic mechatronic systems”, presented at the First International Conference of IFToMM Italy (IFIT 2016) – Vicenza (Italy), December 2016.

Recipient of an Award for the paper “From the Unimate to the Delta robot: the early decades of Industrial Robotics”, presented at the 6th International Symposium on History of Machines and Mechanisms (HMM 2018) – Beijing (China), September 2018.

Patents

- Italian patent n. 0001372650 (29/03/2010): “Machine and procedure for ground drilling”. Authors: Del Tedesco, Gasparetto, Zanotto;
- Italian patent n. 0001381863 (27/09/2010): “Control apparatus and procedure for an automatic opening and closing device”. Authors: Antonioli, Gasparetto, Vidoni, Zanotto;
- Italian patent n. ITUD20100218 (30/05/2012): “Device and procedure for loading and unloading goods to and from vehicles”. Authors: Gasparetto, Zanotto, Lanzutti, Boscarol.

Organizational activity and membership of committees

President of IFToMM Italy, the Italian branch of the International Federation for Promotion of Mechanism and Machine Science (since 2017 to date).

Chair (since 2018 to date) of the Permanent Commission for History of Machine and Mechanism Science (HMMS) of the IFToMM (International Federation for Promotion of Mechanism and Machine Science).

Vice-president of IFToMM Italy, the Italian branch of the International Federation for Promotion of Mechanism and Machine Science (from 2013 to 2017).

Member (since 2014) and Deputy Chair (from 2015 to 2017) of the Permanent Commission for History of Machine and Mechanism Science (HMMS) of the IFToMM (International Federation for Promotion of Mechanism and Machine Science).

Member (since 2018) of the International Scientific Committee of the International Conference in Alpe-Adria Danube Region (RAAD).

Member of the Advisory Board of “City Life Magazine” (since 2013).

Member of the Scientific Board of the “SPS/IPC/Drives Italia” Fair in Parma, Italy (since 2012).

Member of the Scientific Board of the magazine “Automazione Oggi” (since 2010).

Member of the Technical-Scientific Committee of “Startup” (the Italian competition for innovative entrepreneurial ideas) from 2005 to 2010.

Member of the Program Committee of the following conferences:

- 5th International Conference on Advanced Manufacturing Systems and Technology (AMST) (1999)
- - 6th International Conference on Advanced Manufacturing Systems and Technology (AMST) (2002)
- 5th Austrian Robotics Workshop (2015)
- 6th Austrian Robotics Workshop (2016)
- 1st IFToMM Italy Conference (2016)
- 26th RAAD Conference (2017)
- 2^o Italian Conference of Robotics and Intelligent Machines (I-RIM 2020)

Member of the International Advisory Committee of the 5th International and 20th National Conference on Machines and Mechanisms (iNaCoMM2021), December 9-11, 2021 – Jabalpur (India).

Member of the International Advisory Committee of MECHATRONICS 2018, the 16th Mechatronics Forum International Conference (2018).

Member of the International Scientific Committee of the International Scientific and Professional Conference - POLITEHNIKA 2023 (December 15th, 2023 - Belgrade, Serbia).

Member of the Scientific Committee of the 16th edition of the IFToMM World Congress (November 5-10, 2023 – Tokyo, Japan).

Member of the Scientific Committee of MTM & Robotics 2020, the Joint International Conference of the XIII International Conference on Mechanisms and Mechanical Transmissions (MTM) and the XXIV International Conference on Robotics (Robotics), October 14-16, 2020 – Timisoara (Romania).

Co-chair of I4SDG, The 1st IFToMM for Sustainable Development Goals online Workshop (November 25-26, 2021).

Chair of the Scientific Committee di IFIT2020, the 3rd IFToMM ITALY Conference (September 9-11, 2020 - Napoli, Italy).

Chair of the Scientific Committee of IFIT2018, the 2nd IFToMM ITALY Conference (November 29-30, 2018 - Cassino, Italy).

General Chair of the 4th IFToMM Symposium on Mechanism Design for Robotics (MEDER 2018), September 11-13, 2018 – Udine (Italy).

Member of the Scientific Committee of IFIT2016, the 1st IFToMM ITALY Conference (December 1-2, 2016 - Vicenza, Italy).