

Prof. Alessio Artoni

Current Position: Associate Professor ING-IND/13 (Applied Mechanics)

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WORK EXPERIENCE

- **Oct 2018 – ongoing: Associate Professor**
Associate Professor of Applied Mechanics (ING-IND/13) at the Department of Civil and Industrial Engineering, Università di Pisa
- **Dec 2011 – Oct 2018: Tenured University Researcher**
Researcher in Applied Mechanics (ING-IND/13) at the Department of Civil and Industrial Engineering, Università di Pisa
- **Jan 2010 – Nov 2011: Research Fellow**
Department of Mechanical, Nuclear, and Production Engineering, Università di Pisa
- **Sept 2008 – Nov 2009: Post-doctoral Researcher**
Department of Mechanical Engineering, The Ohio State University, Columbus (OH), United States
- **Aug 2004 – Dec 2004: Research Scholar**
Department of Mechanical, Nuclear, and Production Engineering, Università di Pisa

EDUCATION

- **Ph.D. in Mechanical Engineering (Mar 2008)**
Department of Mechanical, Nuclear, and Production Engineering, Università di Pisa.
Visiting scholar (Aug 2007 – Nov 2007) at the Department of Mechanical Engineering of The Ohio State University (Columbus, OH, USA).
- **Master's Degree in Mechanical Engineering, 110/110 (Jul 2004)**
Università di Pisa

ACADEMIC POSITIONS

- Member of the joint boards of the degree programs in Mechanical Engineering, Biomedical Engineering, Industrial Design Engineering, Robotics and Automation Engineering, Università di Pisa
- Member of the faculty board of the PhD program in Industrial Engineering, Università di Pisa
- Member of the department board of the Department of Civil and Industrial Engineering, Università di Pisa
- External expert member of the PhD committee at the Department of Mechanical Engineering, KU Leuven (Belgium)
- Professor of applied mechanics courses for the degree programs in Mechanical Engineering, Biomedical Engineering, Industrial Design Engineering, Robotics and Automation Engineering, Università di Pisa.

SCIENTIFIC POSITIONS and AFFILIATIONS

- Associate Editor of the international journal *Mechanism and Machine Theory* (Q1), Elsevier
- Associate Editor of the international journal *Precision Engineering* (Q1), Elsevier
- Scientific reviewer for several international journals, including *Mechanism and Machine Theory*, *ASME Journal of Mechanical Design*, *Computer Methods in Applied Mechanics and Engineering*, *IEEE Robotics and Automation Letters*, *IEEE Transactions on Haptics*, *Meccanica*.
Session chair and scientific reviewer for several international conferences, such as *ASME IDETC/CIE*, *IEEE International Conference on Robotics and Automation (ICRA)*, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
- Affiliation to the scientific society *Associazione Italiana di Meccanica Teorica e Applicata (AIMETA)*, *IFTtoMM Italy*.

MAIN RESEARCH PROJECTS / ACTIVITIES / LABS

- Principal Investigator for numerous research contracts funded by private and public entities, including:
GE Avio Aero, *Ferrari* and *Ferrari GES* (Formula 1), *Dana*, *Gear and Power Transmission Research Laboratory (GearLab)*, Ohio State University, USA). Total funding received approx. 700000 €
- Participant in the European FP7-ICT project "PaCMan" (Probabilistic and Compositional Representations of Objects for Robotic Manipulation)
- Participant in the European FP7-ICT project "WALK-MAN" (Whole-body Adaptive Locomotion and Manipulation)
- Participant in the European FP7-JTI Clean Sky project "GTFTR" (Geared Turbofan Test Rig)

- Participant in the European H2020 project "SoMa" (Soft-bodied intelligence for Manipulation)
- Collaboration with Prof. Pierre Dupont's research group at "Dupont Laboratory – Medical Robotics and Interventional Devices," Department of Cardiac Surgery, Boston Children's Hospital, Harvard Medical School (Boston, MA, USA)
- Participant in the national project (funded by MUR-PON) ARS01_01067 titled "AVALON - AViodrive and Innovative Electric Generator," with GE Avio s.r.l. as the lead organization
- Collaboration with Dr. Claudio Pacchierotti's research group at the Centre National de la Recherche Scientifique (CNRS), Rainbow Team, IRISA, and Inria (National Institute for Research in Computer Science and Automation), Brittany-Atlantique, Rennes, France
- Participant in the Ecosystem (PNRR) "THE – Tuscany Health – Spoke 9" ("Robotics and Automation for Health"), funded by the EU. Coordinator of activity A9.2.a4: "Sensing systems, models, techniques, and methods for rehabilitation design and assessment".

CURRENT RESEARCH FIELDS

Prof. Artoni's current research interests include: optimal design of gear drives for power transmission, simulation-based multi-objective/robust design optimization, trajectory planning and numerical optimal control for (bio)robotics, biomechanics.

PUBLICATIONS

Publications indexed in Scopus can be found at the following link:

<https://www.scopus.com/authid/detail.uri?authorId=8985302900>

A complete list of publications can be found at the following link:

<https://arpi.unipi.it/cris/rp/rp06982>

SCIENTIFIC AWARDS

- Second prize for best thesis in Mechanical Transmissions awarded by ASSIOT (Italian Association of Transmission and Gear Manufacturers), under the patronage of AgustaWestland.
- "AIMETA Junior 2013 in Machine Mechanics" award, granted by the Italian Association of Theoretical and Applied Mechanics (AIMETA).
- Awards for "Outstanding contribution in reviewing" for the years 2016 and 2017, given by the Editorial Committee of the international journal *Mechanism and Machine Theory*.
- "First Honorable Mention" and a sum of 500 USD in the competition for the "Best IEEE Transactions on Haptics 2020 Short Paper Award", for the publication: Rahal, R., Matarese, G., Gabiccini, M., Artoni, A., Prattichizzo, D., Giordano, P.R., Pacchierotti, C. (2020). Caring About the

Human Operator: Haptic Shared Control for Enhanced User Comfort in Robotic Telemanipulation. IEEE Transactions on Haptics, 13(1), pp. 197-203.

- "Winner of the MSNDC Student Paper Competition", awarded by the ASME Multibody Systems and Nonlinear Dynamics technical committee at the ASME IDETC-CIE 2022 International Conference (St. Louis, MO, USA) for the publication: Tomasi, M., Artoni, A. Identification of motor control objectives in human locomotion via multi-objective inverse optimal control (2022), Proceedings of the ASME Design Engineering Technical Conference, 9, art. no. V009T09A017.
- "Springer Best Research Paper on Mechanism and Machine Science" award, given by Springer, and the "Gold Best Research Paper Award", granted by the International Award Committee IFIT 2022, at the Fourth International Conference of IFToMM ITALY - IFIT 2022 (Naples) for the publication: Grabovic, E., Ciulli, E., Artoni, A., Gabiccini, M. A Model for the Prediction of Frictional Power Losses in Hypoid Gears (2022) In: Niola, V., Gasparetto, A., Quaglia, G., Carbone, G. (eds) Advances in Italian Mechanism Science. IFToMM Italy 2022 (IFIT 2022). Mechanisms and Machine Science, 122, pp. 219-228.
- "Teacher of the Year 2022-23" for the course "Fundamentals of Applied Mechanics" in the degree program in Industrial Design Engineering, Università di Pisa.