Curriculum Vitae

Antonio Bicchi
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I.D. Born on June, 1, 1959, in Pontremoli (Tuscany). Italian citizen.

Education

- Laurea degree in Mechanical Engineering, December 1984. Awarded *cum laude*, Università di Pisa;
- Ph.D., Dept. of Mechanical Eng., Università di Bologna, September 1989;
- Post Doctoral Scholar, Artificial Intelligence Laboratory, Massachusetts Institute of Technology, 1989.

Positions

2001– Professor of Automatic Control and Robotics, Università di Pisa;

2009– Senior Scientist, Istituto Italiano di Tecnologia, Genova;

2013– Adjunct Professor, School of Biological and Health Systems Engineering (SBHSE), Arizona State University, U.S.A.

2007 Adjunct Professor, Dept. of Psychology, Università di Firenze;

2004–2012 Director, Interdepartmental Research Center "E. Piaggio";

1997–2000 Associate Professor, Università di Pisa;

1990–1997 Assistant Professor, Università di Pisa;

1991–1996 Adjunct Professor, Dept. of Information Engineering, Università di Siena;

1990–1991 Postdoctoral Visiting Scientist, Artificial Intelligence Laboratory, Massachusetts Institute of Technology;

Main Scientific Interests

- Robotics and Intelligent Machines;
- Haptics and Multimodal Interfaces;

- Automatic Control of Hybrid Continuous/Symbolic Dynamical Systems;

Publications

Antonio Bicchi is author of around 120 articles on journals and 400 peer-reviewed papers presented at conferences and chapters in edited books.

In August, 2024, Google Scholar reports about 34000 citations (more than 14000 in the last 5 years), with indices h=85 (55) and i10=412 (238). At the same date, Scopus reports 563 documents, 21600 citations, h=68.

The October 2023 data update for "Updated science-wide author databases of standardized citation indicators" (aka "Top 2% scientists of all times") reports him to be within the top 0.1% as no. 100 in AI and Engineering and no. 30 in Control and Robotics.

Honours and Awards

2024 Front page highlight in Journal "Robotics" (https://www.mdpi.com/journal/robotics) for paper "Exploring Saliency for Learning Sensory-Motor Contingencies in Loco-Manipulation Tasks" (https://www.mdpi.com/2218-6581/13/4/58)

2023 King-Sun Fu Memorial Best IEEE Transactions on Robotics Paper Award - Honorable mention for paper "Grasp it Like a Pro 2.0: A Data-Driven Approach Exploiting Basic Shapes Decomposition and Human Data for Grasping Unknown Objects", Alessandro Palleschi, Franco Angelini, Chiara Gabellieri, Do Won Park, Lucia Pallottino, Antonio Bicchi, and Manolo Garabini Volume 39, Issue 5, pages 4016-4036, October 2023.

2019 Ordine del Cherubino (highest recognition of the University of Pisa).

2018 ERC Synergy Grant for the research program "Natural Bionics", 2019-2025. Co-PIs Dario Farina (Imperial College, London) and Oskar Aszmann (University Hospital, Wien)

2018 "IEEE RAS George Saridis Leadership Award in Robotics and Automation." Citation: For his leadership in the robotics and automation community through research innovation, technology transfer, education and professional development.

2017 "Award for Excellence" for top 10 most cited papers since first publication of the Elsevier Mechanism and Machine Theory Journal for "An atlas of physical human– robot interaction" Volume 43, Issue 3, March 2008, Pages 253-270, by A. De Santis, B. Siciliano, A. De Luca, A. Bicchi

2017 IEEE Int.l Conf. on Advanced Intelligent Mechatronics (AIM'17) Best Paper Award (finalist): "Design and Characterization of a Novel High-Compliance Spring for Robots with Soft Joints" F. egrello, M. Catalano, M.arabini, M. Poggiani, D. G. Caldwell, N. Tsagarakis, A. Bicchi.

2017 IEEE Worldhaptics Conference 2017. Best Paper Award (finalist): "Tactile Slip and Hand Displacement: Bending Hand Motion with Tactile Illusions", M. Bianchi, A. Moscatelli, S. Ciotti, G.C. Bettelani, F. Fioretti, F. Lacquaniti, and A. Bicchi.

2017 IEEE Worldhaptics Conference 2017. Best Paper Award and Best Student Paper Award (finalist): "The Rice Haptic Rocker: skin stretch haptic feedback with the Pisa/IIT SoftHand", E. Battaglia, J. Clark, M. Bianchi, M. Catalano, A. Bicchi, and M. O'Malley

2017 International Congress on Ultra Modern Telecommunications and Control Systems (ICUMT2017). Winner, Best Paper Award (Robotics) and Best Student Paper Award (General).

2016 Haptics Symposium 2016 Best Paper Award: "A Wearable Fabric-based Display for Haptic Multi-Cue Delivery", M. Bianchi, E. Battaglia, M. Poggiani, S. Ciotti, A. Bicchi.

2015 Humanoids 2015 Best Interactive Paper Award: "Dexterity augmentation on a synergistic hand: the Pisa/IIT SoftHand+", C. Della Santina, G. Grioli, M. Catalano, A. Brando, and A. Bicchi;

2015 Two of Top Ten Cited papers, Robotics and Autonomous Systems

2014 EuroHaptics 2014 Best Poster Award: " A change in the fingertip contact area induces an illusory displacement of the finger", A. Moscatelli, M. Bianchi, A. Serio, O. Al Atassi, S. Fani, A. Terekhov, V. Hayward, M. Ernst and A. Bicchi

2013 Top Ten Best Research Papers, IEEE Transaction on Intelligent Transportation Systems

2012–2017 Awarded an ERC Advanced Grant for the individual research program "SoftHands";

2013 IEEE Int. Conf. Robotics and Automation 2013 Best Paper Award (finalist): "A real–time robust observer for an agonist–antagonist variable stiffness actuator", T. Menard, G. Grioli, and A. Bicchi;

2012 Humanoids 2012 Best Paper Award: "Adaptive Synergies for a Humanoid Robot Hand", G. Grioli, M. Catalano, C. Piazza, A. Serio, E. Farnioli, and A. Bicchi;

2012 IROS 2012 JTCF Novel Technology Best Paper Award: "Synergy-based optimal design of hand pose sensing", M. Bianchi, P. Salaris, and A. Bicchi;

2012 IROS Jubilee Best Video Award, "Variable Impedance Actuators: Moving the Robots of Tomorrow", B. Vanderborght, A. Albu-Schaeffer, A. Bicchi, *et al.*;

2012 ICRA 2012 Best Manipulation Paper Award (finalist), "Tele-Impedance: Towards Transferring Human Impedance Regulation Skills to Robots", A. Ajoudani, N. Tsagarakis, and A. Bicchi;

2011 IEEE RAS Distinguished Service Award "For his work as RAS Membership Vice-President, Chair of the RAS Conference Editorial Board, and leader in making RAS the focal point for Haptics"

2010 Haptics Symposium 2010 Best Paper Award (finalist), "A new fabric-based softness display" M. Bianchi, A. Serio, E. P. Scilingo, and A. Bicchi;

2009 ETFA 2009 Fumio Harashima Best Paper Award, "Designing Real-Time Embedded Controllers using the Anytime Computing Paradigm" by A. Quagli, D.Fontanelli, L. Greco, L. Palopoli, and A. Bicchi;

2009 CDC 2009 General Chairs' Recognition Award for Interactive Papers, "On the Security of Linear Distributed Iterations", F. Pasqualetti, A. Bicchi, and F. Bullo, IEEE Intl. Conf. on Decision and Control;

2009 AAP Award for Excellence in Physical Sciences and Mathematics, for Springer Handbook of Robotics, Springer Science and Business Media, Professional & Scholarly Publishing Division, Association of American Publishers, Inc.;

2008 ICRA 2008 KUKA Service Robotics Best Paper Award, "VSA-II: a Novel Prototype of Variable Stiffness Actuator for Safe and Performing Robots Interacting with Humans", R. Schiavi, G. Grioli, S. Sen, A. Bicchi;

2007 Invited to write the entry for "Controllo, Teoria del" ("Control Theory") for the Enciclopedia Italiana "Treccani", the major and most prestigious Encyclopaedia in Italy;

2005 IEEE Fellow "for contributions to automatic control of mechanisms and robots;"

2005 ICRA'05 Best Manipulation Paper Award,

1998 IEEE ICRA'98 Best Paper Award (finalistr);

1990 IEEE ICRA'90 A. Philips International Award (finalist);

1985 Award "L. C. Rossi" for the best national M.S. dissertation on Automation Research.

Honours and Awards to Students

2023 SIDRA (Italian Society of Professors and Researchers in Automatica) Award (best Italian Ph.D. Thesis in Automatic Control) to Federica Barontini;

2023 EuroHaptics Society Award (Best Ph.D. Thesis in Haptics) to Federica Barontini.

2023 IEEE RAS Early Career Award to Cosimo Della Santina.

2023 IEEE Italy Section - ABB 2023 Master Thesis in Technology to Giulia Pagnanelli;

2022 University of Pisa: Best Engineering PhD Award to George Jose Pollayil;

2022 IEEE Italy Section - ABB 2022 Ph.D. Thesis in Technology to Patricia Capsi;

2021 SIDRA (Italian Society of Professors and Researchers in Automatica) Award (best Italian Ph.D. Thesis in Automatic Control) to Franco Angelini;

2021 IEEE RAS Early Career Award to Arash Ajoudani.

2021 Georges Giralt PhD Award (best Ph.D. Thesis in Eu Robotics and Automation) to Giuseppe Averta;

2020 Georges Giralt PhD Award (best Ph.D. Thesis in Eu Robotics and Automation) to Cosimo Della Santina;

2020 University of Pisa: Best Engineering PhD Award to Cristina Piazza;

2020 EECI PhD Award (best PhD thesis in Eu Control for Complex and Heterogeneous Systems). Finalist, Cosimo Della Santina;

2018 University of Pisa: Best Engineering PhD Award to Edoardo Battaglia;

2016 EuroHaptics Society Award (Best Ph.D. Thesis in Haptics) to Alessandro Altobelli.

2015 Georges Giralt PhD Award (best Ph.D. Thesis in Robotics and Automation). Finalist, Arash Ajoudani;

2014 Georges Giralt PhD Award (best Ph.D. Thesis in Robotics and Automation) to Manuel G. Catalano;

2007 Georges Giralt PhD Award (best Ph.D. Thesis in Robotics and Automation). Finalist, Giovanni Tonietti;

Boards, Scientific Societies, and Service

2019– President, Italian Institute of Robotics and Intelligent Machines;

2020 Member of the Expert Committee to draft the National Research Plan for the Italian Ministry of University and Research

2017-2019 Elected Member of the Advisory Committee (AdCom) of IEEE Robotics and Automation Society;

2017-2018 Member of the Advisory Board, Institut des Systèmes Intelligents et de Robotique (ISIR), Sorbonne Universités, Paris

2016– Distinguished Lecturer of the IEEE Computer Society/Robotics and Automation Society (RAS) Technical Committee on Haptics;

2013–2016 President, Scientific Committee "Consorzio Intellimech" for Industrial Research, Bergamo, Italy;

2011-2015 Member of the Executive Board, Technology Pole for Technology Transfer and Startup Incubation, Navacchio, Pisa, Italy

2014–2015 Vice President for Publication Activities, IEEE Robotics and Automation Society (RAS);

20013–2014 Elected Member of the Advisory Committee (AdCom), IEEE RAS;

2012 Chair, Society Awards Evaluation Committee, IEEE RAS;

2010–2013 President, Italian Society of Researchers in Automatic Control (SIDRA);

2009-2010 Co-Chair, IEEE Fellow Evaluation Committee;

2009-2011 Elected Member of the Advisory Committee (AdCom), IEEE RAS;

2005 Chair, First WorldHaptics Conference and WorldHaptics Steering Committee

2007– Senior Advisor, Technical Committee on Haptics;

2006– Steering Committee, Eurohaptics Society;

2006–2007 Vice President for Membership, IEEE Robotics and Automation Society (RAS) (term 2006-2007);

2004–2006 Distinguished Lecturer of the IEEE Robotics and Automation Society (RAS);

2001–2004 Chairman, IEEE Control Systems Society (CSS) Technical Committee on Manufacturing, Automation, and Robotics Control;

2001–2003 Elected Member of the Advisory Committee, IEEE RAS;

Commissions of Trust

2022– member of the Science Advisory Board at the Munich Institute of Robotics and Machine Intelligence (MIRMI) at Technical University of Munich;

2022– Member of the Advisory Board, Berkeley SkyDeck Europe, Milan;

2021 Member of Swedish Distinguished Professorships Evaluation panel;

2020 Member of Swedish Linnaeus Program Evaluation panel;

2015, 2017, 2019, 2021 Member of ERC Advanced Grants Evaluation Panel;

2019 Member of the Austrian COMET Program Evaluation Panel;

2017-2018 Member of the Evaluation Board, Institut des Systèmes Intelligents et de Robotique (ISIR), Sorbonne Universités, Paris

2016 Review Panel member, Ho-Am Foundation Prize (most prestigious award for Koreans at home and abroad);

2016 Expert Evaluator, Ministry of Education, Science and Sport, Republic of Slovenia;

2016 Review Panel member, Samsung Research Funding Center, Korea;

2016 Review Panel member, Deutsche Forschungsgemeinschaft (DFG) German Research Foundation;

2014 Chair, Selection Committee for Physical Sciences and Engineering, Italian Government SIR (Scientific Independence of Young Researchers) Program. Also, head of sub-panel PE-7 (Information and Communications Engineering);

2013 Chair, Selection Committee for Physical Sciences and Engineering, Italian Government FIR (Future in Research) Program. Also head of sub-panel PE-7 (Information and Communications Engineering);

2012 Member of the Evaluation Board of Centers of Excellence for the Spanish Government "Severo Ochoa" Programme;

2011, 2012 Member of the Agence Nationale de la Recherche, Département non thématique - Evaluation Committee "SIMI 3 - Matériels et logiciels pour les systm̀es et les communications". Supervising the French evaluation of national and international research projects "Blanc" and "JCJC";

2012– Chair, Society Awards Evaluation Committee, IEEE Robotics and Automation Society (the Society counts ca. 6000 members);

2012– Review Panel member, European Research Council (ERC) Starting Grants, Consolidator Grants;

2012 Review Panel member, ETH Zurich Research Commission, Switzerland;

2011– Intl. Evaluation Board member, Jao Tong University, Shanghai, China;

2011 Review Panel member, Israel Science Foundation (ISF);

2011 Review Panel member, Croatian Science Foundation (CSF);

2011 Review Panel member, Belgium Research Council (FWO);

2010 Review Panel member, Progetti Futuro in Ricerca (FIRB) 2010;

2010 Review Panel member, Netherlands Organisation for Scientific Research (NWO);

2010 Chair, Fellow Evaluation Committee, IEEE Robotics and Automation Society (the Society counts ca. 6000 members);

2009– Member of review panel for the European Research Council (ERC) Advanced Investigator Grants;

2011– Member of Intl. Evaluation Board, Jao Tong University, Shanghai, China;

2004– Invited to evaluation panels for national funding agencies in Austria, Sweden, Poland, Norway, the Netherlands, Belgium, the U.S.A., France, Israel, Croatia, and Italy;

2003– Member of evaluation panels for European Commission in FP6 and FP7 calls on "Cognition and Robotics", "Multimodal Interfaces", "Biologically Inspired Intelligent Information Systems","Future and Emerging Technologies - Open Scheme";

2005– Project Reviewer for European Commission grants (Actors, Miamm, Multimodal, Biotact, Rosetta, Romans) .

Editorial Boards

2023– Editor in Chief, *Int. J. of Robotis Research*

2022– Editor, Annual Reviews in Control, Robotics and Autonomous Systems

2015–2019 Founding Editor in Chief, *IEEE Robotics and Automation Letters*

2012-2014 Editor, *IEEE Trans. Automation Science and Engineering*

2011–2018 Editor in Chief, Springer Series "Briefs in Electrical and Computer Engineering: Control, Automation and Robotics"

2008-2011 Editor in Chief, IEEE RAS *Conference Editorial Board*, in charge of the annual review process for IEEE RAS Int. Conferences on Robotics and Automation (ICRA);

2009– Member of the Editorial Advisory Board, *Springer Series on Touch and Haptic Systems*;

2008– Member of the Editorial Board, *Int. Journal of of Intelligent Computing and Cybernetics*;

2001– Member of the Editorial Board, *Int. Journal of Robotics Research*;

2007 Member of the Committee for Selection of the Founding Editor in Chief of the *IEEE Transactions on Haptics*;

2004–2009 Member of the Advisory Board of IEEE Trans. on Automation Science and Engineering;

2001–2005 Member of the Editorial Board, "IEEE Robotics and Automation Magazine";

1996–2000 Associate Editor, *IEEE Transactions on Robotics and Automation*;

1997–2001 Member of the Editorial Board, *Applied Mathematics and Computer Science*;

Conference Organization

2019 Founding General Chair, I-RIM 3D, Three Days of Robotics and Intelligent Machines, Rome, October 2020;

2020 General Chair, Robotics Science and Systems 2020;

2019 Program Chair, Robotics Science and Systems 2019, Freiburg, Germany;

2016 Program Chair, IEEE Int. Conf. Robotics and Automation, ICRA'16, Stockholm, Sweden;

2016 General Chair, IEEE Modelling and Simulation for Autonomous Systems Workshop MESAS'16, Rome;

2015 General Chair, Int.l Symp. Robotics Research ISRR'15, Sestri Levante, Italia, September 2015;

2011-2015 General Chair and organizer of the Robotics Jam Sessions series, Pisa, 2011, 2012, 2013, 2014, 2015.

2011 Conference Chair, First Automatica.it Symposium, Pisa, September 2011;

2011 Chair of the Control Systems Technical Program, ICUMT 2011, St. Petersburg, Russia;

2007 Conference Chair, HSCC'07 — Tenth Int. Conference on Hybrid Systems: Computation and Control, Pisa, April 2007 (with A. Bemporad and G. Buttazzo);

2005 Foundin General Co-Chair, IEEE WorldHaptics (WHC'05) — First Joint Haptics Symposium and EuroHaptics Conference, Pisa, March 2005;

2000 Conference Chair, First International Workshop on "Mathematical Control Theory and Robotics", SISSA/ISAS, Trieste, Italy (with A. Agrachev, B. Piccoli);

2010 Organizer and Co–Chair of the IEEE–RAS ICRA Workshop on New variable impedance actuators for the next generation of robots, Anchorage, Alaska;

2008 Organizer and Co–Chair, Robotics Science and Systems Workshop on "Design and Control of Variable Impedance Actuators for Physical Interaction of Robots with Humans and their Environment", Zurich;

2009 Chair, Best Service Robotics Paper Award Committee, IEEE Int. Conf. Robotics and Automation (ICRA);

2010 Chair, Best Manipulation Paper Award Committee, IEEE Int. Conf. Robotics and Automation (ICRA);

2008 Area Chair, Robotics Science and Systems, Zurich, 2008;

2008 Program Vice-Chair (Europe), IEEE/RSJ Int. Conf. Intelligent Robot Systems, IROS'08 Nice, 2008;

2007 Program Vice-Chair, IEEE Int. Conf. Automation Science and Systems, CASE'07, Scottsdale, September 2007;

2006 Area Chair, Robotics Science and Systems, Philadelphia, August 2006;

2005 Program Vice-Chair, IEEE Robotics and Automation Conference, ICRA'05, Barcelona, May 2005;

2003 Chair, Conference Awards Committee, IEEE Int. Conf. Robotics and Automation, ICRA'03 - Taipei, Taiwan ;

2002 Program Chair, IEEE joint CSS/RAS Int. Work. on Control Problems in Robotics, Las Vegas, December 2002;

2002 Vice Program Chair, IEEE Int. Conf. Robotics and Automation, ICRA'02, Washington, D.C.;

2002 Chair, Conference Awards Committee, IEEE Int. Conf. Robotics and Automation, ICRA'03 - Taipei, Taiwan and ICRA'02 - Washington, DC, USA;

2000 Organizer and Co–Chair (with Vijay Kumar, Univ. Pennsylvania) of the *IEEE Robotics and Automation Society Mini–Symposium on "Grasping and Contact"*, San Francisco, USA.

1998 Organizer and Co–Chair of the IEEE–RAS Workshop on Grasping, Fixturing, and Manipulation (with T. Yoshikawa, J. Burdick), Leuven, BE;

1996 Organizer and Co–Chair of the IEEE–RAS Workshop on Minimalism in Robot Manipulation (with K. Goldberg);

1995– Member of the International Program Committee for IEEE Int. Conf. on Robotics and Automation (ICRA) since '97, IEEE/RSJ Int. Symp. on Robotic Systems (IROS) since '95, Int. Symp. Robotics Research (2007), other conferences and workshops.

Research projects

2024-2029 Horizon Heritage Grant 101158046, "AUTOMATA - AUTOMated enriched digitisation of Archaeological liThics and cerAmics" (IIT, Budget 581K EUR)

2023-2026 National Recovery and Resilience Plan, "RAISE - Robotics and AI for Socio-economic Empowerment" Spoke 1: "Urban Technologies for Inclusive Engagement" Spoke 2: "Personal and Remote Healthcare" Spoke 4: "Smart and Sutainable Ports" (IIT, 692K EUR)

2022-2026 Complementary National Recovery and Resilience Plan "Fit4MedRob - Fit for Medical Robotics", Research initiatives for innovative technologies and paths in the healthcare and assistance sector - PNC0000007 (UniPi, 2054K EUR)

2022-2023 European Research Council ERC-POC - Proof of Concept Grant 727536, "WISH: Wearable Integrated Soft Haptic Display for Prosthetics", Coordinator (IIT Budget 150K EUR)

2019-2025 European Research Council ERC-2018-SyG Synergy 810346 "Natural BionicS - Natural Integration of Bionic Limbs via Spinal Interfacing", 2019-2025. Co-PIs Dario Farina (Imperial College, London) and Oskar Aszmann (University Hospital, Wien). (IIT budget 3.3 EUR)

2021-2024 H2020-EU.2.1.1. grant no. 101016970 "NI Natural Intelligence for Robotic Monitoring of Habitats", Participant (UNIPI, overall budget: 3053K EUR).

2021-2025 H2020-EU.1.2.1. grant no. 964854 "RePAIR Reconstructing the Past: Artificial Intelligence and Robotics Meet Cultural Heritage", Participant (IIT, overall budget: 3522K EUR).

2021-2024 H2020-EU.2.1.1. grant no. 101017274 "DARKO Dynamic Agile Production Robots That Learn and Optimise Knowledge and Operations", Participant (UNIPI, overall budget: 6997K EUR).

2018-2021 H2020-EU.2.1.1. grant no. 780883 "THING subTerranean Haptic INvestiGator", Participant (UNIPI, overall budget: 4071K EUR).

2020-2024 H2020-ICT-2019-2, "SOPHIA Socio-physical Interaction Skills for Cooperative Human-Robot Systems in Agile Production" (UniPi budget: 770 K EUR)

2020-2024 H2020-ICT-2019-2 "Reconcycle: Self-reconfiguration of a robotic workcell for the recycling of electronic waste," Participant (IIT budget: 650K EUR)

2019-2020 European Research Council ERC-POC - Proof of Concept Grant 727536, "Soft-Handler: Commercial feasibility of an integrated soft robotic system for industrial handling", Coordinator (Budget 150K EUR, IIT 71,750 EUR)

2018-2022 H2020-ICT-27-2017 - System abilities, SME & benchmarking actions, safety certification Grant no. 780883 "THING - subTerranean Haptic INvestiGator" (UniPi budget: 454 K EUR)

2017-2018 European Research Council ERC-POC - Proof of Concept Grant 727536, "SoftHand Pro–H: A Soft Synergy-based Hand Prosthesis with Hybrid Control", Coordinator (Budget 149,787 EUR, IIT 79,000 EUR)

2017-2020 EC H2020 ICT-26-2016-1 - System abilities, development and pilot installations, Grant no. 732737 "ILIAD - Intra-Logistics with Integrated Automatic Deployment: safe and scalable fleets in shared spaces" (UniPi budget: 1.1 M EUR)

2017-2019 H2020-MSCA-IF-2016 (Marie Skłodowska-Curie Individual Fellowships) "MIMICS: Electromyography-driven musculoskeletal modelling for biomimetic myoelectric control of prostheses with variable stiffness actuators", Coordinator, hosting MSC fellow Massimo Sartori (IIT budget: EUR 1,097,293.75 EUR)

2015– Institute of Electrical and Electronics Engineering (IEEE): Editorial Services Agreement, Editor in Chief (UniPi budget 70,000 USD per year)

2015–2019 EC H2020 ICT.23.2014, Grant no. 645599 "SOMA - Soft-bodied intelligence for Manipulation", Scientific Co-Coordinator (UniPi budget 1,617,250.00 EUR)

2013-2016 EC FP7-ICT-2011.2.1 project no. 600918 "Pacman: Probabilistic and Compositional Representations of Objects for Robotic Manipulation" (UniPI budget 1,054,944.00)

2016-2020 Horizon 2020 2015.ICT.24a Robotics RIA, Grant no. 688857 "SoftPro: Synergy-based Open-source Foundations and Technologies for Prosthetics and RehabilitatiOn", Coordinator (IIT budget 1,772,207.50 EUR)

2014-2016 National Institute of Health (NIH) R21 Grant 1R21HD081938-01, "Soft Synergy-Based Artificial Hand for Prosthetic Applications", Principal Investigator (budget IIT 60,000 USD)

2014-2016 Mayo Clinic Private Benefactor Grant "Applications of Soft-Hands as Prostheses", Principal Investigator (budget IIT 650,000USD)

2013-2017 EC FP7-ICT-2013-10 project no. 611832 "WALK-MAN: Whole-body Adaptive Locomotion and Manipulation", Principal Investigator (UNIPI budget 1.210.800,00EUR)

2013-2017 EC FP7-ICT-2011-9 project no. 601165"WEARHAP - WEARable HAPtics for humans and robots" (UniPi budget 987,958.00 EUR)

2012–2017 European Research Council Advanced Grant ERC-291166 "SOFTHANDS - A Theory of Soft Synergies for a New Generation of Artificial Hands", Coordinator (IIT budget 2,279,600 EUR)

2011-2015 EC FP7 IP ICT-287513 "SAPHARI, Safe and Autonomous Physical Human-Aware Robot Interaction", Principal Investigator (UNiPi budget 940,000 EUR);

2010-2014 EC FP7 "PLANET - PLAtform for the deployment and operation of heterogeneous NETworked cooperating objects" (UniPi Budget 370,000 EUR).

2010–2014 EC FP7 IP project 270350 "ROBLOG - Cognitive Robot for Automation of Logistic Processes", Principal Investigator (UniPi Budget 840,000.00 EUR)

2010–2014 EC FP7 IP project "THE Hand Embodied", Project Coordinator (overall budget 7.15 M EUR, UniPi budget 1,600,00.00 EUR).

2009–2012 EC FP7 project "VIACTORS - Variable Impedance Actuation Systems Embodying Advanced Interaction Behaviours", Principal Investigator (UniPI budget 500,000.00 EUR).

2008–2011 EC FP7 project "CHAT - Control of Heterogeneous Automation Systems: Technologies for scalability, reconfigurability and security", Coordinator (Overall budget 2,300,00.00 EUR, UniPI budget 0.5 M EUR).

2010-2012 EC FP7 "ECHORD – the European Clearing House for Open Robotics Development, Experiment HANDS.DVI". Budget: 0.12M EUR (local).

2008-2010 Italian Ministry for Education and Research PRIN grant 2007CCRNFA, "Sicurezza per l'Interazione nel Contatto tra Umani, Robot e Ambiente (SICURA)"; Budget: 0.2 M EUR

2008 ESA European Space Agency, "ESA Lunar Robotic Challenge". Budget: 50K EUR;

2007–2010 EC FP7 project "ComplexEIT - From nano to large electronic systems". Pilot projects for cooperation between European Institutes of Technology (EAC/26/7). P.I. on behalf of the European Embedded Control Institute (Overall budget: 1.5M EUR).

2006–2009 EC FP6 STREP project "PHRIENDS -Physical Human-Robot Interaction: Dependability and Safety", Project Coordinator. Budget: 2.1 M EUR (overall), 0.5 M EUR (local).

2006–2009 MIUR Interlink project "ICO - International Curriculum Option on Hybrid Systems" (General Cordinator). The project has created a joint curriculum of studies for Ph.D. students in the field pf Hybrid Control for Complex, Distributed and Heterogeneous Embedded Systems, among 14 Universities in Europe and the U.S. Recently extended to 17 Universities. Budget: 0.12 M EUR

2004–2007 FP6 Integrated Project, Contract IST-2004-004536 "RUNES - Reconfigurable Ubiquitous Networked Embedded Systems". Budget: 0.31 M EUR;

2006–2010 EC FP6 IP "IMMERSENCE - Immersive Multi-Modal Interactive Presence" IST-FET Proactive project. Budget: 0.4M EUR;

2005–2006 FP6 EURON PRP "Phridom - Physical Human Robot Interaction in Anthropic Domains" (General Cordinator), Budget: 0.1 M EUR.

2002–2005 FP5 E.U. IST 2001-38040 PRESENCE project "TOUCH-HAPSYS - Towards a Touching Presence: Hight-Definition Haptic Systems" (Scientific co-Coordinator). Budget: 0.63 M EUR;

2002–2005 E.U. IST 2001-37170 project "RECSYS: Real-Time Embedded Control of Mobile Systems with Distributed Sensing". Budget: 0.35 M EUR;

2002-2004 MIUR PRIN 095297-002-2002, "Embedded Control of Dynamical Systems with Limited Computational and Communication Resources";

2003-2005 MIUR FIRB RBAU01RY47, "Conflict resolution in decentralized control of air traffic";

2000-2002 CNR Agenzia 2000, "Optimal Control Algorithms for Embedded Systems", Consortium Coordinator;

2000–2003 CNR Progetto Strategico Società della Informazione "Fai-Robot - Towards a Robotic Telelaboratory";

2000–2004 Italian Space Agency (ASI) "TEMA – Team-based Exploration by Mobile Agents", Consortium Coordinator;

2000–2002 MURST/ENEA project "SIRO – High Performance Simulation of Mechanical and Robotic Systems".

1999–2001 E.C. TEMPUS project "Edutrac" (Accreditation and Certification In Industrial Metrology);

1996–1998 NATO CRG Grant "Motion Planning for Air Traffic Management Systems (ATMS)" (with S. S. Sastry, U.C. Berkeley);

1997-1998 Scientific and technological Cooperation Joint project (Poland Ministry for University) "Statistical Methods for evaluation and design of multivariate sensors" (with Ewaryst Rafajlowicz, Univ. Wroclaw).

1994–1997 ESPRIT Project "LEGRO: Semi–autonomous legged vehicle for unstructured environments";

1993–1994 NSF - CNR Bilateral Research Program "Nonlinear Control Methods for Kinematically Defective Non–Holonomic Systems" (with S.S. Sastry, U.C. Berkeley);

1990–1992 ONR - CNR Bilateral Research Program on "Whole-Arm and Enveloping Manipulation" (with J.K. Salisbury, MIT - AI Lab);

Networks of Excellence (as P.I.)

2008–2012 EC FP7 Network of Excellence, "CONET - Cooperating Objects NETwork of excellence". Budget: 0.2 MEur;

2010–2014 EC FP7 Network of Excellence, "HYCON2 - Highly-complex and networked control systems". Budget: 3.9MEur (overall), 0.16 MEur (local);

2004–2008 FP6 Network of Excellence, Contract IST-2004-511368 "HYCON - HYbrid CONtrol: Taming Heterogeneity and Complexity of Networked Embedded Systems". Budget: 0.3 MEur;

2004–2008 FP6 Network of Excellence, Contract FP6-2002-507728 "EURON - European Robotics Network". General Coordinator *ad interim*, Fall 2006;

Patents

- "Cella di Carico Universale a Monotrave Cilindrica" Bicchi Antonio, IT1211362(B) (1989-10-18)
- " Process for measurement of tightening torque of screws, bolts, etc.", Bicchi Antonio, Nicola Gian Luigi (FIAT Auto S.p.A.) IT patent IT1241173 (B) (1993-12-29).
- "Method for calibrating intrinsic sensors", Bicchi Antonio and Granata Francesco, Cons. Naz. Ricerche (CNR), IT patent no. IT1278676 FI95A000108 (1995-05-19)
- "Contact type pointer device for three-dimensional graphics programs" Bicchi Antonio and Granata Francesco, IT patent no. ITPI94A000025 (1994-09-01);
- "Universal Cylindrical Loadcell", A. Bicchi, IT patent no. 1211362, August 1987.
- "Meccanismo motoriduttore a rigidezza variabile e rapidamente controllabile", A. Bicchi and G. Tonietti, IT patent no. PI2004A000077, October 2004
- "Mechanism of Motor reduction with variable rigidity and rapidly controllable", A. Bicchi and G. Tonietti, U.S. patent US7699731 (2004-10-14)
- "Non-linear elastic mechanism with programmable characteristics" Bicchi Antonio; Catalano Manuel Giuseppe; Grioli Giorgio. Univ Pisa. It. Pat. IT2011PI00057 20110525 (2011-05-25) Priority 2011-05-25; Filed 2011-05-25; Published 2012-11-26.

- "Procedimento di ricostruzione virtuale di una posa reale di almeno una porzione di corpo umano", Matteo Bianchi, Antonio Bicchi, Paolo Salaris, Italian Patent 0001410855 (2012-03-01)
- "Variable Pliability Actuator", Bicchi Antonio; Catalano Manuel Giuseppe; Garabini Manolo; Grioli Giorgio. Univ DI Pisa, Centro di Ricerca E. Piaggio, U.S. Patent US2012096973, E.U. Patent EP2444207 (2010-10-21)
- "Underactuated Robotic Hand" Bicchi Antonio; Della Santina Cosimo; Brando Alberto; Piazza Cristina; Catalano Manuel Giuseppe; Grioli Giorgio. Università di Pisa and Fond. Ist. Italiano di Tecnologia, Application number: WO2016IB56468 20161027 Priority number(s): IT2015UB05328 20151102 (2015-11-02)
- "Artificial Hand", Bicchi Antonio, Catalano Manuel, Della Santina Cosimo, Grioli Giorgio, Piazza Cristina, Garabini Manolo. Università di Pisa and Fond. Ist. Italiano di Tecnologia, Application number: PCT/IB2017/052684 (2017-05-09) Published on 23 Novembre 2017 with n. WO 2017/199127
- "Articolazione Prostetica", A. Bicchi, M. Barbarossa, C. Piazza, M. Catalano G. Grioli, P. Capsi Morales. 01 APRILE 2021 - 102021000008261 ns. rif./our ref.: 15834 A IT 979 / IIT Ref: PT200554. Priority 2021-04-01; Filed 2021-04-01; Published 2022-10-01.
- "Dispositivo Di Feedback Protesico", F. Barontini, M. Bianchi, Antonio Bicchi, M. Catalano, G. Grioli, C. Petrocelli, M. Poggiani. 04 MARZO 2021 - 102021000005099 ns. rif./our ref.: 15774 A IT 979. Priority 2021-03-04; Filed 2021-03-04; Published 2022-09-04.
- "Process Of Interacting With Objects", A. Bicchi, G. Lentini, M. Catalano, G. Grioli. WO EP US CN JP KR IT IT202100003821A1 Priority 2021-02-19;Filed 2021-02-19; Published 2022-08-19
- "A Prosthetic Foot With Adaptability In Sagittal And Frontal Planes" A. Ghezzi, A. Bicchi, M. Catalano, G. Grioli, L. Ottusi, M. Maimeri, DoI presentata Maggio 2021 (PT210589).
- International Patent PCT/IB2021/059616 "Adaptive Robotic Foot". n. WO2022/084849, Published 28 April 2022.
- "Logistic device", WO EP IT WO2021024161A1, Priority 2019-08-07; Filed 2020-08-03; Published 2021-02-11. A logistic device (1) is comprised for removing the protective film (11) of a pallet (10) or similar; the pallet (10) comprises a product (12) and the film (11) wrapping the product (12); the logistic device (1) comprises an acquisition apparatus (2) adapted to make at least one acquisition of the ...
- " A logistic device", WO EP US JP US20220203542A1, Priority 2019-04-30; Filed 2020-04-29; Published 2022-06-30. Logistic device, for handling a package being collected that defines a contact surface with items not being collected, including a first robotic arm including adaptive gripper having at least three degrees of freedom to modify adaptive gripper position and spatial orientation; a second robotic arm ...

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Plenary, Keynote and Public Speeches

2024 "What is it like to be a bot?," Distinguished Speaker Series @Science of Intelligence Cluster of Excellence - Berlin, Germany

2023 "Robotics. What comes next?," Distinguished Guest of the Slovenian-Italian Association, Josip Stefan Institute, Ljubliana, Slovenia.

2023 "What is it like to be a bot?," Plenary Lecture, Philosophy and Mathematics of Situated Agency (Pamosa), Oulu (Finland), June 4-8 2023.

2022 "Think Soft: Neuroscience-inspired Soft Robotics Technologies for Prosthetics and Rehabilitation," Plenary, International NeuroEngineering School, Genoa, Italy.

2022 "I-RIM as a model of National Robotics Associations," Invited Guest Talk at National Competence Center in Robotics, Swiss Robotics Conference Lugano, Switzerland

2022 "The Embodied Intelligence Aporia," Plenary Lecture, Int. Conf. Robotics and Automation ICRA'22, Philadelphia, PA, USA.

2022 "What Advances can Soft Robotics bring to Prosthetics and Rehabilitation?" 2022 Summer School on Neurorehabilitation (SSNR2022) Baiona, Spain June 12-17, 2022.

2021 "Creating the future: today's trends for tomorrow's manufacture" Innovation Talk Panel at the Italian Pavillion of Dubai Expo2020.

2021 "Think Soft: From Robotics to Prosthetics and Rehab, how Soft Tech is Changing the Game", Shirley Ryan Ability Labs Webinar Series, July 26, 2021.

2021 Humanoids 2021, Plenary Lecture: "How to design and control naturally moving machines, and why." July 20, 2021.

2021 Munich-i @Automatica Fair "From Robots in Emergency to Robots in Everyday Life", June 22, 2021.

2021 Robotics Today, "Planning and Learning Interaction with Variable Impedance". May 21, 2021.

2021 And& Festival Leuven, "Is there anything robots can't do?", April 21, 2021.

2021 International Foundation on Robotics Research (IFRR) Global Colloquium "More robots more human", April 1, 2021.

2021 Technology Innovation Institute of the Arab Emirates Seminar "From Robotics to Prosthetics and Back Again" March 10, 2021.

2021 Accademia dei Lincei, "Verso la Persona Aumentata: Tecnologia ed Etica delle Sinergie Bioniche", March 5, 2021

2020 Lectio Magistralis to SOGEI Top Management "Robot, Intelligenza Artificiale e Persona: una relazione sempre più stretta", December 15, 2020.

2020 MakerFaire Europe, Groundbreakers - Re:Making the Future, "The future with Robots".

2020 Conference on Robot Learning CORL. Keynote Speech: "From Human-Robot Interaction to Human-Robot Integration", November 2020

2020 Ubiquitous Robots 2020, Plenary Talk: "SymBionics: From Human Robot Interaction to Human Robot Integration", June 2020

2020 Cybathlon Symposium, Keynote speech: "From Collaborative Robotics to Prosthetics and Rehab: How Soft Tech is Changing the Game," September 2020

2020 Stati Generali della Robotica - Universal Robots. Keynote:" Le nuove frontiere della robotica collaborativa: si può programmare senza scrivere codice?", Novembre 2020

2020 Web Marketing Festival - We Make the Future. Mainstage Talk, "Robot per le Persone", June 2020

2020 Euroscience Open Forum (ESOF) "Freedom for Science, Science for Freedom" 2-6 September 2020, Trieste

2020 ICRA'20 Opening Plenary Panel "Covid-19: How Can Roboticists Help?"

2020 National Academy of Engineering/Computing Community Consortium NAE/CCC Workshop on the Role of Robotics in Infectious Disease Crises. Stage Setting Talk: "What are the needs and roles for robotics in infectious disease crises such as the current COVID-19 pandemic?"

2020 Plenary at Innovation Festival WMF "Robots for the People", Robotica Applicata e Telemedicina (https://youtu.be/FZABsa5aSpE?t=2812)

2020 Messe Frankfurt/ SPS Italy Workshop "Continuous evolution of industrial robotics", June 2020

2019 A soft synergy model of human manipulation and its applications to prosthetics and rehabilitation. 2019 Summer School on Neurorehabilitation (SSNR2019), Baiona (Spain) September 15-20, 2019.

2019 Monde Machine et Monde Vivant - Hommage à Léonard, Institut Français Italia. I Dialoghi del Farnese: l'Uomo-Macchina

2018 Plenary Lecture, "Robotics: Body, Intelligence, and Control", European Control Conference, Limassol, Cyprus, June 2018

2018 Tandem Plenary Lecture with Prof. Mark Spong: "Control Challenges and Opportunities in Soft Robotics", IFAC Conf. Modelling Identification and Control of Nonlinear Systems, Guadalajara, Mexico, June 2018

2018 Invited Speech, "Soft Robotics: from the lab to the real world", Imperial Robotics Forum, Imperial College, London, March 2018

2018 Invited Speech, "Soft robotics technologies to implement human motor control lessons in advanced prosthetics for the real world" Int. Symp. on Innovations in Amputation Surgery and Prosthetic Technologies, Wien, May 2018

2017 Public Speech, Faraday Seminar Series: "Dagli algoritmi all'intelligenza artificiale alla robotica Due visioni a confronto sul rapporto tra persone e macchine", with Paolo Ferragina. Regione Toscana, Dec. 2017

2017 Public Speech, La Digital Tech: "Robots souples et mains de robots : à la recherche du mouvement fluide", Rennes, France, Nov. 2017

2017 Invited Speech, "Robots: Body, Intelligence, and Control", Tenth Year celebrations of the Institut des Systèmes Intelligents et de Robotique (ISIR), Sorbonne Universités, Paris

2017 Public Speech, "Innovazione e Ricerca: dialoghi e incontri. Un'esplorazione multidisciplinare verso la conoscenza come base per il progresso e lo sviluppo futuro." Internet Festival, Pisa, 2017

2017 ICRA-X Speech "The Quest for Natural Machine Motion", May 29 - June 3, Singapore.

2017 Public Speech, "Robot collaborativi: dalla sicurezza alle prestazioni", IL PARADIGMA INDUSTRIA 4.0 Applicazioni e implicazioni nel settore AUTOMOTIVE, Pontedera, Oct. 2017

2017 Plenary Lecture, "Robotica: dall'uomo alla tecnologia e ritorno" SAP Executive Summit: Live Business, Le imprese italiane e la rivoluzione 4.0. March 16-17, 2017, Villa d'Este, Cernobbio.

2017 Invited Talk at"Life & Robotics" Symposium, Springer Nature Campus, Heidelberg.

2016 Plenary Lecture, "On the Soft Synergy Model and Its Applications to Artificial Hands," 3rd Workshop of the Anthropomorphic Motion Factory: Biomechanics of Antropomorphic Systems Workhsop, LAAS-CNRS, Toulouse, Nov. 24-25, 2016

2016 Plenary Lecture, "Soft Robotics for Human Cooperation and Rehabilitation," IEEE Int. Conf. Advanced Robotics and Mechatronics, Macau, August 2016;

2016 Plenary Lecture, "On the Soft Synergy Model and Its Applications to Artificial Hands," Living Machines, Edinburgh, Scotland, July 2016;

2016 Invited Lecture, "Robots: Body, Intelligence, and Control," Workshop Biological control across scales, Cambridge (UK), June 2016.

2016 Invited Lecture, "Soft Robotics for Human Cooperation and Rehabilitation" Opening the new Robotics and Mechatronics Center, German Space Agency, Oberpfaffenhofen, April 2016;

2016 Invited Lecture, "Soft Synergy-based Robotics for Prosthetics and Rehabilitation", Motor Control Summer School, Jerusalem, June 2016;

2016 Invited Lecture, "Synergy-based Soft Robotics for Prosthetics and Rehabilitation", Rehabilitation Robotics Workshop, Arizona State University, Tempe, AZ, February 2016;

2016 Invited Lecture, "Body Languages for Human Robot Interaction", University of California at Berkeley, January 2016;

2016 Invited Lecture, "Body Languages for Human Robot Interaction", Stanford University, January 2016;

2016 , Invited Lecture, "Body+Environment=Function. Studying the embodied intelligence equation", Workshop on Manipulation with the Environment, ICRA 2016;

2016 Invited Speech, "Introduction to Robotics: Culture, Science and Technology of the Next Industrial Revolution", PICTET Headquarters, Geneve, April 2016;

2015 Series of six Invited Public Speeches, "Introduction to Robotics: Culture, Science and Technology of the Next Industrial Revolution", PICTET Bank Meetings Series (Turin, Milan, Genoa, Bologna, Florence, Rome, Lugano) October 2015-January 2016;

2015 Plenary Lecture, "Body Languages for Human Robot Interaction", Human-Friendly Robotics Symposium, Munich, Germany, October 21-23, 2015;

2015 Plenary Lecture, "Of Robots, Humans, Bodies and Intelligence", Human-Robot Interaction Conference, Portland, Oregon, March 2015;

2015 Invited Lecture, "Synergies in the control of human and humanoid hands", NSF Workshop Robotic and Interactive Technologies for Neuroscience and Neurorehabilitation, August 31 - Sptember 2, Arenzano, Genova;

2015 Plenary Round Table Speech, "World Haptics Conference: Retrospective and Perspectives", World Haptics Symposium 2015, June 22-6, Evanston, Chicago, USA;

2015 Town Hall Speech "Introduction to the IEEE Robotics and Automation Letters", ICRA'15, May 28, Seattle, USA;

2015 Keynote Lecture, "Soft and Variable Stiffness Robotics", Natural Machine Motion Initiative Winter School, Rome, March 26, 2015;

2014 Invited Lecture, "Complexity, Simplicity, Embodied Intelligence, and Manipulation", National Days Of Robotics, Paris, October 2014;

2014 Plenary Lecture, "Trading off Feedforward and Feedback, Cyber and Physical in the Control of Complex Systems" 7th International Workshop on Communication Technologies for Vehicles (Nets4Cars), Peterhof, Russia, October 2014;

2014 Plenary Lecture, "Control Systems, Robotics, and the Neurosciences: A New(?) Convergence", Intl. Congress on Ultramodern Telecommunications and Control Systems - ICUMT'14, St. Petersburg, Russia, October 2014;

2014 Public Speech, "The Body The Hand The Mind", Hops 'n Bots. Robotic cheetahs, fish, fingers, and bacteria: The coming menagerie of mechanical cohabitants. Adler After Dark series, Adler Planetarium, Chicago, September 2014;

2014 Keynote Lecture, "Natural Machine Motion and Embodied Intelligence", IEEE/RSJ International Conference on Intelligent Robots and Systems – IROS'14, Chicago, September 2014;

2014 Plenary Speech, "Muscles for Robots: Understanding, Designing and Controlling Natural Motion with Variable Impedance Actuators", Motor Control Summer School, Bled, Slovenia, June 26, 2014;

2014 Invited Lecture, "Robot Hands, Prostheses, and the KISS rule", Royal Institute of Technology, Stockholm August 24, 2014;

2014 Invited Lecture, "Design and control of a new generation of robot hands" Univ. of Utah, March 2014;

2014 Plenary Speech, "Working hard to make a simpler hand: the Pisa-IIT SoftHand", Worksop on Rehabilitation Robotics, Arizona State University, Tempe, AZ, USA, February 2014.

2013 Public Speech, "What do the eye and the hand tell us about the brain, and how this can be useful to people" Andrea Bocelli Foundation Challenges Workshop, December 5, 2013 Boston, USA;

2013 Invited Lecture, "An embodied intelligence approach to taming the complexity of hands", Massachusetts Institute of Technology, December 2013;

2013 Invited Public Speech, "Robots for the Society and Societies of Robots", presented at Utopia Film Festival, Tel Aviv, Israel, September 2013.

2013 Invited Public Speech, "Semplice? Non è facile! Mani umane e robotiche, tra cultura scienza e tecnologia", Festival della Scienza, Genova, October 2013;

2013 Plenary Lecture, "Soft and Adaptive Synergies at Work in the Pisa-IIT SOftHand", Workshop on "Hand synergies - how to tame the complexity of grasping", Karlsruhe, May 2013;

2013 Plenary speaker, EU COST Workshop on Social Robotics, June 2013, Bruxelles;

2012 , Invited Speech, "Trading off feedforward and feedback, remote and local in the control of complex interconnected plants", London Workshop on the Control of Cyber-Physical Systems, London UK, October 21-21, 2012;

2012 Invited speech, "Excellence at Small Scale", Fondazione Carlo Erba, Milano;

2012 TEDx Talk, "L'intelligenza nella mano", September 29, 2012 `http://youtu.be/JZnbgJbqWb0`

2012 Workshop Andrea Bocelli Foundation Challenges: "Intelligenza delle mani: dall'uomo alle interfacce aptiche artificiali", July 6, 2012 Pisa Italy

2012 Plenary Speech, RoManSy Conference, Paris, 2012;

2012 Plenary Lecture, "Variable Stiffness Actuation, Optimal Control, and Snowclones", Workshop on Variable Stiffness Actuation, St. Paul, MN, USA, May 2012;

2011 Invited Speech, Robotics Colloquium: Down to Earth, DLR - German Space Agency, Munich, Germany, November 2011 `http://www.youtube.com/watch?v=SOurl7M47qo`

2011 Keynote Speech, Summer School on Impedance, Frauenchiemsee, Bavaria, Germany, July 2011 `http://www.youtube.com/watch?v=UaUE7CmInkc`

2011 Invited Speech, Royal Society Theo Murphy Meeting on Active Touch Sensing, Kavli Center, Buckinghamshire, UK, February 2011;

2010 Plenary Speech, "Grasping and Manipulating with an Embodied Hand", Int. Conf. Applied Bionics and Biomechanics - ICABB Venice, October 2010;

2010 Keynote Speech, Robotics International Summer School, Dubrovnik, Croatia, June 2010;

2010 Keynote Speech, "Towards a Society of Robots Behaviors, Misbehaviors, Consensus and Security", Intl. Congress on Ultramodern Teleccmunications and Control Systems - ICUMT'10, Moscow, October 2010;

2010 Keynote Speech, "Variable Impedance Actuators for Adaptive Robotics", SCHUNK Intl. Expert Days in Service Robotics, Hausen, Germany, Feb. 24-25, 2010;

2010 Invited Public Speech, "Men, Robots, and Other Strange Creatures", Festival delle Scienze - Tra possibile e Immaginario, , Auditorium - Parco della Musica, Rome, January 15, 2010;

2009 "Towards a Society of Robots: Robot Behaviors, Misbehaviors, and Agreements", Celebrating 50 Years of Robotics, University of Pennsylvania, Philadelphia, December 11, 2009;

2009 Invited Public Speech, "Robots for Physical Interaction with Men: Performance and safety", HiTechExpo, Milan, November 2005;

2009 Invited Public Speech, "Robots Ever Close to Humans", Festival della Scienza, Genova, October 25, 2009;

2009 Plenary Speech "Variable Impedance Actuators for Safety, Adaptivity, and Efficiency in physical Human-Robot Interaction", German Workshop on Robotics GWR2009, June 9 and 10, Braunschweig, Germany;

2008 Plenary Speech, "Variable Impedance Actuators for Safe and Effective Physical Human-Robot Interaction", 5th Intl. Conf. on Ubiquitous Robots and Ambient Intelligence (URAI 2008), Seoul, Korea, November 2008;

2008 Plenary Speech, "Mechanical and Control Co-Design for Intrinsic Safety in Physical Human-Robot Interaction", IEEE-IARP Int. Workshop on Technical Challenges for Dependable Robots in Human Environments, Pasadena, May 2008;

2008 Plenary Speech, "Physical Human-Robot Interaction: Dependability, Safety, and Performance", Tenth Intl. Workshop on Advanced Motion Control, Trento, March 2008;

2005 Invited Public Speech, "Decentralized Cooperative Conflict Resolution Among Multiple Autonomous Mobile Agents", Scientific Week Inauguration at ITAM (Instituto Tecnolǵico Autńomo de México), México City.

2005 Invited Distinguished Lecture, "Safe and Fast Robot Design for Physical Human Robot Interaction", Jornadas Nacionales de Robotica, Santander, Spain;

2005 Invited Speech, "Physical Human-Robot Interactions: Dealing with the Safety–Performance Trade–Off in the Mechanical/Control Co-Design", Mechatronic Seminar Series, ETH Zurich;

2005 Distinguished Lecture, "Safe and Fast Robot Design for Physical Human Robot Interaction", Jornadas Nacionales de Robotica, Santander, Spain;

2001 Keynote Speech, "Tactile Flow", Eurohaptics 2001, Birmingham, UK;

1997 Plenary Panel "Grand Challenges in Robotics", IEEE Int. Conf. on Robotics and Automation, Albuquerque, NM, USA;

1996 Distinguished Lecture "A Telelaboratory for Nonholonomic Motion Planning" HEROS (Hazardous Environment Robots and Systems) Workshop, Barcelona, SP;

1993 B.E.S.C. Lecture, "On the closure properties of robotic grasping", Univ. California at Berkeley, 1993.

1992 Plenary Speech, "Robotic Manipulation and Grasping", Int. Fed. Theory of Machines and Mechanisms (IFToMM) Symposium, Nagoya, JP;

Doctoral Students

Domenico Prattichizzo Ph.D. student, 1991–1994. Academic career in Robotics. Full Professor at Università di Siena; Editor in Chief, IEEE Trans. on Haptics;

Andrea Balluchi Ph.D. student, 1992–1996. Professional career in automotive research for industry. Co-founder and President, Pure Power Control s.r.l.;

Alessia Marigo Ph.D. student, 1995–1999. Research career in Applied mathematics and Automatic Control. Researcher at the Istituto per le Applicazioni del Calcolo "M. Picone", C.N.R., Italy. High-School Educator.

Enzo Pasquale Scilingo Ph.D. student, 1996-1999 (co-supervised). Full Professor at Università di Pisa;

Lucia Pallottino Ph.D. student, 1999-2002. Full Professor at Università di Pisa, Director of Centro "E. Piaggio";

Luigi Palopoli , Ph.D. student at Scuola Superiore S. Anna, Pisa (co–supervised), 1999–2002. Full Professor at Università di Trento;

Gianfranco Parlangeli , M.S. student in Pisa, Academic career in Automatic Control and Robotics. Associate Professor at University of Lecce,

Giuseppe Notarstefano , M.S. student in Pisa. Full Professor at Alma Mater, Università di Bologna. Holder of an ERC Starting Grant.

Fabio Pasqualetti , M.S. student in Pisa. Academic career in Automatic Control and Robotics. Associate Professor at University of California, Riverside.

Pierpaolo Murrieri , Ph.D. student, 2000–2003. Professional career in software industry. CTO Capability Manager, Leonardo, Italy

Stefania Pancanti , Ph.D. student, 2001-2004. High-School Educator.

Giovanni Tonietti , Ph.D. student, 2002–2005. Finalist, G. Giralt Ph.D. Thesis Award. Professional career in research for automotive industry. CTO at MMI (micro surgical instruments);

Nicola Sgambelluri , Ph.D. student, 2002–2005. Professional career in industrial research. Currently at Pentair Water Italy, and co-founder of Adatech srl, Italy;

Daniele Fontanelli , Ph.D. student, 2003–2006. Academic career in Robotics. Full Professor at Università di Trento;

Bruno Picasso , Ph.D. student at Scuola Normale Superiore, Pisa, 2003-2006. High-School Educator

Vincenzo Scordio , Ph.D. student, 2004–2008. Professional career in research for industry. Currently co-owner of spin-off consultancy firm in for industrial automation;

Antonio Danesi , Ph.D. student, 2004–2008. Professional career in space research. Project manager at European Space Agency;

Emanuele Mazzi Ph.D. student, 2006–2009. Professional career in research for automotive industry. Co-founder and Administrator of spin-off company Pure Power Control s.r.l.;

Adriano Fagiolini Ph.D. student, 2005–2009. Assistant Professor, University of Palermo;

Soumen Sen Ph.D. student, 2005–2009. Researcher at Robotics and Automation Division, Central Mechanical Engineering Research Institute, Durgapur, India;

Riccardo Schiavi Ph.D. student, 2006–2009. Director, Robotics Reserach Division, Huawei Italy;

Nevio Dubbini Ph.D. student, 2007–2011. CEo at spin-off consulting firm;

Giorgio Grioli Ph.D. student, 2007–2011. Co-founder, *qbrobotics s.r.l.*, spin-off company. Researcher at IIT;

Paolo Salaris Ph.D. student, 2007–2011. Reseracher INRIA Sophia Antipolis. Associate Professor, Università di Pisa;

Felipe Belo Ph.D. student, 2007–2011. CTO at Createc Robotics, UK;

Matteo Bianchi Ph.D. student, 2008–2012. Associate Professor at University of Pisa;

Simone Martini Ph.D. student, 2008–2012. Entrepreneur, Florence;

Manuel Catalano Ph.D. student, 2009–2013. Recipient of the "G. Giralt Award" for Best Ph.D. thesis in Robotics. Researcher at IIT, Genova;

Alessandro Serio Ph.D. student, 2009–2013. R&D Designer, CMC Marine;

Arash Ajoudani Ph.D. student, 2010–2014. Finalist, G. Giralt Award. IEEE RAS Early Career Award, 2021. ERC Starting Grant. Tenured Researcher at IIT, Genova;

Manolo Garabini Ph.D. student, 2010–2014. Associate Professor at University of Pisa;

Vinicio Tincani Ph.D. student, 2010–2015; Currently Fellow at JOiiNT Lab, Bergamo;

Alexandra Velasco Vivas Ph.D. student, 2011–2015. Professor at the Universidad Militar Nueva Granada, Bogotà, Colombia.

Alessandro Altobelli Ph.D. student, 2011–2015. Recipient of the "Eurohaptics Award" for Best Ph.D. thesis in Robotics, 2015. Employed at RACE, Culham, UK.

Manuel Bonilla Ph.D. student, 2011–2015. Currently employed in private industrial research and innovation;

Edoardo Farnioli Ph.D. student, 2011–2015; Project Manager at Dyson Robotics, UK;

GianMaria Gasparri Ph.D. student, 2012–2016. Fabrica Machinale, Pisa;

Hamal Marino Ph.D. student, 2012–2016. Project Manager at Aeolus Robotics, Austria;

Mirko Ferrati Ph.D. student, 2012–2016. Project Manager at Aeolus Robotics, Austria;

Alessio Rocchi Ph.D. student, 2012–2016. Senior Software Engineer, Cruise, CA, USA;

Alessandro Settimi Ph.D. student, 2013–2017; Entrepreneur and CEO of Proxima Robotics, Italy;

Aurora De Acutis Ph.D. student, 2014–2018; Assistant Professor in Pisa;

Edoardo Battaglia Ph.D. student, 2014–2018; Professor at University of Utah;

Matteo Rossi Ph.D. student, 2014–2018. Currently in R&D in Alstom, Bologna;

Glenn Mathijssen Ph.D. Student, Co-Tutele with Prof. B. Vanderborght, Vrij Universitet Brussels, 2014-2018. Currently CEO of Alberts, Bruxelles, BE;

Tobia Marcucci M.Sc. student, 2015; Currently Professor at UC Santa Barbara;

Simone Ciotti Ph.D. student, 2015–2019. Currently with Oculus Rift, USA;

Marco Laghi Ph.D. student, 2015–2019. Currently employed in R&D in SACMI SpA, Italy

Cristina Piazza Ph.D. student, 2015–2019. Recipient of the award for Best Ph.D. Thesis in Engineering and Architecture at the University pf Pisa, 2019. Currently Professor at Technical University Munich.

Sariah Mghames Ph.D. student, 2015–2019. Currently postdoc in Lincoln Univ.

Cosimo Della Santina Ph.D. student, 2015–2019. Currently Professor in Delft Univ. Recipient of the "G. Giralt Award" for Best Ph.D. thesis in Robotics. IEEE RAS Early Career Award, 2023. ERC Starting Grant, 2024.

Antonio Di Lallo Ph.D. student, 2015–2019. Currently reseracher at New York University, USA.

Franco Angelini Ph.D. student, 2016–2020; Recipient of the 2020 SIDRA award for the Best Italian Ph.D. Thesis in Automatica. Currently Researcher in Pisa

Giuseppe Averta Ph.D. student, 2016–2020; Recipient of the "G. Giralt Award" for Best Ph.D. thesis in Robotics. Currently Researcher in Turin

Andrea Ciullo Ph.D. student, 2016–2020; Currently employed in a startup

Simone Fani Ph.D. student, 2016–2020; Currently postDoc in Arizona State University, USA

Anna Mannucci Ph.D. student, 2016–2020; Currently employed in a Swedish robotics company

Gianluca Lentini Ph.D. student, 2017–2021. Currently postdoc, startupper;

Riccardo Mengacci Ph.D. student, 2017–2021. Currently employed in a Dutch robotics company

Simon Lemerle Ph.D. student, 2017–2021. Curtremntly employed in a French company

Chiara Gabellieri Ph.D. student, 2017–2021;

Gemma Bettelani Ph.D. student, 2017–2021. Currently post-doc at S.S.U.P. S.Anna

Federico Massa Ph.D. student, 2017–2021;

Matthew Jose Pollayl Ph.D. student, 2018–2022. Curremtly employed in industry;

George Jose Pollayl Ph.D. student, 2018–2022. Recipient of the award for Best Ph.D. Thesis in Engineering and Architecture at the University of Pisa, 2022. Currently employed in industry;

Simone Monteleone Ph.D. student, 2018–2022.. Curremtly Post-Doc at IIT;

Patricia Capsi Ph.D. student, 2018–2022. Recipient of the ABB/IEEE Italy Section 2022 Award to the best Ph. D. Thesis in Technology. Curremtly Post-Doc at T.U.M Munich, Ge;

Domenico Mura Ph.D. student, 2018–2022. Curremtly Post-Doc in CNR - Antarctic base expedition;

Federica Barontini Ph.D. student, 2018–2022. Recipient of the "EuroHaptics Award" for Best Ph.D. thesis in Haptics, and of the Recipient of the 2023 SIDRA award for the Best Italian Ph.D. Thesis in Automatica. Curremtly Post-Doc at IIT, startupper;

Grazia Zambella Ph.D. student, 2019–2023. Currently post-doc associate in Univ. Vienna;

Alessandro Palleschi Ph.D. student, 2019–2023. Currently employed in Industry.

Elisa Stefanini Ph.D. student, 2020–2024. Currently entrepreneur in her own startup company.

Fanyi Kong Ph.D. student, 2020–2024;

Michele Pierallini Ph.D. student, 2020–2024;

Olga Napolitano Ph.D. student, 2020–2024;

Lorenzo Pajola Ph.D. student, 2021–2025;

Maddalena Feder Ph.D. student, 2021–2025;

Alessia Ivani Ph.D. student, 2021–2025;

Valeria Sarno Ph.D. student, 2021–2025;

Marco Baracca Ph.D. student, 2021–2025;

Giulia Pagnanelli Ph.D. student, 2022–2026; Recipient of the ABB/IEEE Italy Section 2022 Award to the best Masters Thesis in Technology.

Giorgio Simonini Ph.D. student, 2022–2026;

Giuseppe Milazzo Ph.D. student, 2022–2026;

Matteo Crotti Ph.D. student, 2022–2026;

Giuseppe Infantone Ph.D. student, 2022–2026;

Eleonora Fontana Ph.D. Student, 2022-2026;

Sandhya Chandrasekaran Lakshmi Ph.D. student, 2023–2027;

Gianmarco Cei Ph.D. student, 2023–2027;

Post-Doctoral Associates:

Yacine Chitour (Ph.D. Rutgers Univ.), post-doc in 1995–1996. Currently Professeur à l'Université Paris-Sud 11

Frederic Gouaisbaut (Ph.D. École Centrale de Lille), post-doc in 2001-2002. Currently researcher at Laboratoire d'Architecture et d'Analyse des Systèmes (LAAS-CNRS) and Maitre de Conférences at the Université Paul Sabatier, Toulouse;

Antoine Chaillet (Ph.D. Université Paris Sud), post-doc in 2006–2007. Currently Associate Professor at SUPÉLEC (Ecole Supérieure d'Électricité), Paris;

Sung Hoi Huh , (Ph.D. Korea University, Seoul) post-doc in 2005-2007. Currently Researcher at Human-friendly Welfare Robot System Engineering Research Center (HWRS-ERC) of Korea Advanced Institute of Science and Technology (KAIST).

Luca Greco (Ph.D. Università di Pisa). Post-doc 2007-2009. Currently Associate Professor at Université Paris Sud, Gif-sur-Yvette, France;

Francesca Irene Cavallaro (Ph.D. Scuola Normale Superiore, Pisa). Post-doc 2008-2009. Currently Scientific Staff, Department of Neuroengineering, Fatronik-Tecnalia Foundation, San Sebastian, Spain;

Roberto Filippini (Ph.D. Univ. Pisa). Post-doc 2008-2009. Currently Risk Manager MTA Medical Device Affairs, EBG MedAustron GmbH

Huifang Elizabeth Wang (Ph.D. 2008 Beijing University of Technology, China), post-doc 2009-2012;

Tomas Menard (Ph.D. 2011 Universitè de Lille, France), postdoc since 2011-2012;

Sasha Blue Godfrey (Ph.D. 2012 Catholic University of America, Washington D.C., U.S.A.) post-doc sice 2012;

Competitions

2021 Scientific Coordinator, AlterEgo entry at the ANA Avatar XPrize, Florida 2021.

2021 Scientific Coordinator, SoftHand Pro Team entry at the Cybathlon Championship for Athletes with Disabilities, Zurich 2021. Silver medal.

2017 Coordinator, SoftHand Team entry at Robotic Grasping And Manipulation Competition at IROS2016 (winning team).

2016 Coordinator, SoftHand Pro Team entry at the Cybathlon Championship for Athletes with Disabilities, Zurich, 2017.

2015 Co-leader with N. Tsagarakis of the Walk-Man entry in the DARPA Robotics Challenge (DRC), Pomona, CA, June 2015.

2008 Tutor of the "Lunatics" team of the University of Pisa in the ESA European Lunar Robotic Challenge held on mount Teide on Tenerife Island, October 2008 (silver medal).

Consulting

A. Bicchi is or has been consulting for industrial firms such as Pictet Partners Bank, Gerresheimer GmbH, Ferrari GeS F1, FIAT Auto S.p.A., Galileo Avionica, Intecs HRT, Cozzani Srl, Fioravanti Progetti, etc.. Among the notable outcomes are joint patents with FIAT Auto, and algorithms for active differential control implemented in racing F1 cars in the winning season 2007.

Miscellanea

- **Blurb**: Author of back-cover endorsement for the textbook "Robotics: Modelling, Planning and Control" by Bruno Siciliano, Lorenzo Sciavicco, Luigi Villani and Giuseppe Oriolo, Springer, 2008;
- **Blurb**: Author of back-cover endorsement for the textbook "Planning Algorithms", by Steve Lavalle, Cambridge University Press, 2006;
- **External Ph.D. Referee**: Served as external member in the Ph.D. evaluation committee of many graduates, including Martin Pfanne (DLR, 2021), Mathilde Legrand (ISIR, 2021), Manuel Aiple (Delft Un., 2021), V. Vuskovic (ETH, 2001), P. Ogren (KTH, 2003), A. Speranzon (KTH, 2006), A. Jardon Huete (Madrid, 2006), J. Cordella (Barcelona, 2007), Dmitry Kaynov (Madrid, 2009), Michael Van Damme (Bruxelles, 2009), Bakir Lacevic (Milano, 2010), Matteo Laffranchi (Sheffield, 2011), Romain Michalec (Paris 6, 2011);