

Curriculum Vitae

Antonio Bicchi

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I.D. Born on June, 1, 1959, in Toscana. 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;
- Visiting 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.

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

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

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;
- Haptics and Multimodal Interfaces;
- Control of Hybrid Continuous/Symbolic Dynamical Systems;

Boards, Scientific Societies, and Service

2017-2018 Elected Member of the Advisory Committee (AdCom), IEEE RAS;

- 2016**– Distinguished Lecturer of the IEEE Computer Society/Robotics and Automation Society (RAS) Technical Committee on Haptics;
- 2016**– Member, Advisory Board for the “Robotics” Investment Fund, Pictet Asset Management, Geneva, Switzerland;
- 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);
- 20013–20014** Elected Member of the Advisory Committee (AdCom), IEEE RAS;
- 20012** Chair, Society Awards Evaluation Committee, IEEE RAS;
- 20010–20013** President, Italian Society of Researchers in Automatic Control (SIDRA);
- 20009–20010** Co-Chair, IEEE Fellow Evaluation Committee;
- 20009–20011** Elected Member of the Advisory Committee (AdCom), IEEE RAS;
- 20005** Chair, First WorldHaptics Conference and WorldHaptics Steering Committee
- 20007**– Senior Advisor, Technical Committee on Haptics;
- 20006**– Steering Committee, Eurohaptics Society;
- 20006–20007** Vice President for Membership, IEEE Robotics and Automation Society (RAS) (term 2006–2007);
- 20004–20006** Distinguished Lecturer of the IEEE Robotics and Automation Society (RAS);
- 20001–20004** Chairman, IEEE Control Systems Society (CSS) Technical Committee on Manufacturing, Automation, and Robotics Control;
- 20001–20003** Elected Member of the Advisory Committee, IEEE RAS;

Editorial Boards

- 20015**– Founding Editor in Chief, *IEEE Robotics and Automation Letters*
- 20012–20014** Editor, *IEEE Trans. Automation Science and Engineering*
- 20011**– Editor in Chief, Springer Series “Briefs in Electrical and Computer Engineering: Control, Automation and Robotics”
- 20008–20011** 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);
- 20009**– Member of the Editorial Advisory Board, *Springer Series on Touch and Haptic Systems*;
- 20008**– Member of the Editorial Board, *Int. Journal of Intelligent Computing and Cybernetics*;
- 20001**– Member of the Editorial Board, *Int. Journal of Robotics Research*;
- 20007** Member of the Committee for Selection of the Founding Editor in Chief of the *IEEE Transactions on Haptics*;
- 20004–20009** Member of the Advisory Board of IEEE Trans. on Automation Science and Engineering;
- 20001–20005** 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

- 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** Founder and 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.

Honours and Awards

- 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 humanrobot 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)er 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 Soft-Hand”, E. Battaglia, J. Clark, M. Bianchi, M. Catalano, A. Bicchi, and M. O'Malley
- 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 “Soft-Hands”;
- 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 (finalist);
- 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 - Students

- 2007 Georges Giralt PhD Award (best Ph.D. Thesis in Robotics and Automation). Finalist, Giovanni Tonietti;
- 2014 Georges Giralt PhD Award (best Ph.D. Thesis in Robotics and Automation). Winner, Manuel G. Catalano;
- 2015 Georges Giralt PhD Award (best Ph.D. Thesis in Robotics and Automation). Finalist, Arash Ajoudani;
- 2016 EuroHaptics Society Award (Best Ph.D. Thesis in Haptics). Winner, Alessandro Altobelli.

Plenary, Keynote and Public Speeches

- 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, June 2018.
- 2018** Invited Speech, “Soft Robotics: from the lab to 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 : la recherche du mouvement fluide”, Rennes, France, Nov. 2017
- 2017** Invited Speech, “Robots: Body, Intelligence, and Control”, Tenth Year celebrations of the Institut des Systmes Intelligents et de Robotique (ISIR), Sorbonne Universits, Paris
- 2017** Public Speech, “Innovazione e Ricerca: dialoghi e incontri. Unesplorazione 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, Geneva, 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 - September 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”, Workshop 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 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=S0url7M47qo>
- 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 Telecommunications 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 Tecnológico Autónomo 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 Telaboratory 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 (IFTToMM) Symposium, Nagoya, JP;

Former Students

- Domenico Prattichizzo** Ph.D. student, 1991–1994. Academic career in Robotics. Currently Full Professor at Università di Siena and Director of Siena Robotics and Systems Lab;
- Andrea Balluchi** Ph.D. student, 1992–1996. Professional career in automotive research for industry. Currently 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. Currently Researcher at the Istituto per le Applicazioni del Calcolo M. Picone, C.N.R., Italy, and Visiting Professor at Rutgers-Camden.
- Enzo Pasquale Scilingo** Ph.D. student, 1996-1999 (co-supervised). Academic career in bio-engineering and robotics. Currently Associate Professor at Università di Pisa;
- Lucia Pallottino** Ph.D. student, 1999-2002. Academic career in applied mathematics and robotics. Currently Associate Professor at Università di Pisa;
- Luigi Palopoli** , Ph.D. student at Scuola Superiore S. Anna, Pisa (co-supervised), 1999–2002. Academic career in Computer Engineering and Robotics. Currently Associate Professor at Università di Trento;

- Gianfranco Parlange** , M.S. student in Pisa, Academic career in Automatic Control and Robotics. Currently Assistant Professor of at University of Lecce,
- Giuseppe Notarstefano** , M.S. student in Pisa. Academic career in Automatic Control and Robotics. Currently Associate Professor at University of Lecce, and holder of an ERC Starting Grant.
- Fabio Pasqualetti** , M.S. student in Pisa. Academic career in Automatic Control and Robotics. Currently Assistant Professor at University of California, Riverside.
- Pierpaolo Murreri** , Ph.D. student, 2000–2003. Professional career in software industry. Currently Project Manager at Elsag Datamat, Rome, Italy;
- Stefania Pancanti** , Ph.D. student, 2001-2004. Career in High-School Education.
- Giovanni Tonietti** , Ph.D. student, 2002–2005. Professional career in research for automotive industry. Currently Responsible for Nee Plants at Piaggio VESPA SpA, Pontedera;
- 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. Currently Assistant Professor at Università di Trento;
- Bruno Picasso** , Ph.D. student at Scuola Normale Superiore, Pisa, 2003-2006. Academic career in Applied Mathematics and Automatic Control. Currently Assistant Professor at Politecnico di Milano, Italy;
- Vincenzo Scordio** , Ph.D. student, 2004–2008. Professional career in research for industry. Currently co-owner of consultancy firm in for industrial automation, Massa, Italy;
- Antonio Danesi** , Ph.D. student, 2004–2008. Professional career in space research. Currently employed at the European Space Agency as project manager for VEGA Rocket Launcher;
- Emanuele Mazzi** Ph.D. student, 2006–2009. Professional career in research for automotive industry. Currently Co-founder and Administrator, Pure Power Control s.r.l.;
- Adriano Fagiolini** Ph.D. student, 2005–2009. Currently Assistant Professor, University of Palermo;
- Soumen Sen** Ph.D. student, 2005–2009. Currently Researcher at Robotics and Automation Division, Central Mechanical Engineering Research Institute, Durgapur, India;
- Riccardo Schiavi** Ph.D. student, 2006–2009. Currently Project Leader at Evidence srl, Pisa;
- Nevio Dubbini** Ph.D. student, 2007–2011. Currently employed at own consulting firm;
- Giorgio Grioli** Ph.D. student, 2007–2011. Currently post-doc and Co-founder, *qbrootics s.r.l.*, spin-off company;
- Paolo Salaris** Ph.D. student, 2007–2011. Currently Chargé de Recherche, INRIA Sophia Antipolis;
- Felipe Belo** Ph.D. student, 2007–2011. Currently employed in private industrial research and innovation (UK);
- Matteo Bianchi** Ph.D. student, 2008–2012. Currently Assistant Professor at University of Pisa;
- Simone Martini** Ph.D. student, 2008–2012. Currently entrepreneur in the Florence area;
- Manuel Catalano** Ph.D. student, 2009–2013. Currently post-doc at IIT, Genova;
- Alessandro Serio** Ph.D. student, 2009–2013. Currently employed in private industrial research and innovation;

- Arash Ajoudani** Ph.D. student, 2010–2014. Currently Tenure-track Researcher at IIT, Genova;
- Manolo Garabini** Ph.D. student, 2010–2014. Currently post-doc at Centro Piaggio, University of Pisa;
- Vinicio Tincani** Ph.D. student, 2010–2015; Currently POstDoctoral Fellow at IIT, Pisa;
- Alexandra Velasco Vivas** Ph.D. student, 2011–2015. From 2016, Professor Auxiliar at the Universidad Militar Nueva Granada, Bogot, Colombia.
- Alessandro Altobelli** Ph.D. student, 2011–2015. Winner of EuroHaptics Society PhD Award 2015. Currently at Infinity, Genova.
- Manuel Bonilla** Ph.D. student, 2011–2015. Currently employed in private industrial research and innovation;
- Edoardo Farnioli** Ph.D. student, 2011–2015; Currently employed in private industrial research and innovation;
- GianMaria Gasparri** Ph.D. student, 2012–2016; Currently post-doc in Pisa;
- Hamal Marino** Ph.D. student, 2012–2016; Currently employed in private industrial research and innovation (NL);
- Mirko Ferrati** Ph.D. student, 2012–2016. Currently employed in private industrial research and innovation (GE);
- Alessio Rocchi** Ph.D. student, 2012–2016. Currently employed in private industrial research and innovation (GE);
- Alessandro Settini** Ph.D. student, 2013–2017; Currently post-doc at University of Pisa;
- Aurora De Acutis** Ph.D. student, 2014–2018;
- Edoardo Battaglia** Ph.D. student, 2014–2018;
- Matteo Rossi** Ph.D. student, 2014–2018;
- Glenn Mathijssen** Ph.D. Student, Co-Tutele with Prof. B. Vanderborght, Vrij Universitet Brussels, 2014-2018;
- Simone Ciotti** Ph.D. student, 2015–2019;
- Marco Laghi** Ph.D. student, 2015–2019;
- Cristina Piazza** Ph.D. student, 2015–2019;
- Sariah Mghames** Ph.D. student, 2015–2019;
- Cosimo Della Santina** Ph.D. student, 2015–2019;
- Antonio Di Lallo** Ph.D. student, 2015–2019;
- Giuseppe Averta** Ph.D. student, 2016–2020;
- Andrea Ciullo** Ph.D. student, 2016–2020;
- Simone Fani** Ph.D. student, 2016–2020;
- Franco Angelini** Ph.D. student, 2016–2020;
- Gianluca Lentini** Ph.D. student, 2017–2021;
- Riccardo Mengacci** Ph.D. student, 2017–2021;
- Simon Lemerle** Ph.D. student, 2017–2021;
- Chiara Gabellieri** Ph.D. student, 2017–2021;
- Gemma Bettelani** Ph.D. student, 2017–2021;
- Filippo Massa** Ph.D. student, 2017–2021;

Yujie Zhang Ph.D. student, 2017–2021;

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 Universit 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 Researcher at Paul Scherrer Institute, Villigen, Switzerland;

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

Tomas Menard (Ph.D. 2011 Universit 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 since 2012;

Research Evaluations

2017– member of the Advisory Board, Institut des Systmes Intelligents et de Robotique (ISIR), Sorbonne Universits, Paris

2015, 2017 Member of ERC Advanced Grants Evaluation Panel;

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 systèmes 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, Jiao 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, Jiao 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, Bio-tact, Rosetta, Romans) .

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 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);
- **Competitions**
 - 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. The team won the second position.
 - 2015 Co-leader with N. Tsagarakis of the Walk-Man entry in the DARPA Robotics Challenge (DRC), Pomona, CA, June 2015.

- 2016 Coordinator, SoftHand Pro Team entry at the Cybathlon Championship for Athletes with Disabilities, Zurich, Oct. 8, 2017.
- 2017 Coordinator, SoftHand Team entry at Robotic Grasping And Manipulation Competition at IROS2016 (winning team).
- **Career Letters** I have been asked to evaluate and/or write letters of assessment for candidates to different faculty track positions by several Universities and research institutes, including Northwestern University, Harvard University, Boston University, Georgia Tech, Asian Institute of Technology, Johns Hopkins Univ., Massachusetts Inst. of Technology, Stanford Univ., Purdue Univ., Ecole Polytechnique Federale de Lausanne, Indian Institute of Technology, Tech. Univ. Muenchen, Univ. British Columbia, Univ. Calif. Los Angeles, Univ. Padova, AIT Tsukuba, Case Western Reserve Univ., Korean Inst. of Technology (KIST), Scuola Superiore S. Anna, Univ. Carlos III Madrid, Royal Institute of Technology (KTH), INRIA Grenoble, Univ. California Berkely, CNRS-LAAS Toulouse, Technion HAIFA, Natl. Science Foundation USA, Intuitive Surgical Inc..

Research projects

- 2018-2012** H2020-ICT-27-2017 - System abilities, SME & benchmarking actions, safety certification Grant no. 780883 “THING - subTerranean Haptic INvestiGator” (UniPi budget: 454 KEur)
- 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 MEur)
- 2017-2019** H2020-MSCA-IF-2016 (Marie Skodowska-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)
- 2016-2018** European Research Council Proof-of-Concept Grant no. 727536 SoftHand-Pro H “A Soft Synergy-based Hand Prosthesis with Hybrid Control”, Coordinator (IIT Budget: 76 KEur)
- 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)
- 2011–2016** European Research Council Advanced Grant ERC-291166 “SOFTHANDS - A Theory of Soft Synergies for a New Generation of Artificial Hands”, Coordinator (IIT budget 2,300,000 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 MEur, UniPi budget 1,600,00.00 Eur).
- 2009–2012** EC FP7 project “VIATORS - 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 MEur).
- 2010-2012** EC FP7 “ECHORD the European Clearing House for Open Robotics Development, Experiment HANDS.DVI”. Budget: 0.12MEur (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 MEur
- 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: 1.5MEur).
- 2006–2009** EC FP6 STREP project “PHRIENDS -Physical Human-Robot Interaction: Dependability and Safety”, Project Coordinator. Budget: 2.1 MEur (overall), 0.5 MEur (local).
- 2006–2009** MIUR Interlink project “ICO - International Curriculum Option on Hybrid Systems” (General Coordinator). The project has created a joint curriculum of studies for Ph.D. students in the field of 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 MEur
- 2004–2007** FP6 Integrated Project, Contract IST-2004-004536 “RUNES - Reconfigurable Ubiquitous Networked Embedded Systems”. Budget: 0.31 MEur;
- 2006–2010** EC FP6 IP “IMMERSENCE - Immersive Multi-Modal Interactive Presence” IST-FET Proactive project. Budget: 0.4MEur;
- 2005–2006** FP6 EURON PRP “Phridom - Physical Human Robot Interaction in Anthropic Domains” (General Coordinator), Budget: 0.1 MEur.
- 2002–2005** FP5 E.U. IST 2001-38040 PRESENCE project “TOUCH-HAPSYS - Towards a Touching Presence: High-Definition Haptic Systems” (Scientific co-Coordinator). Budget: 0.63 MEur;
- 2002–2005** E.U. IST 2001-37170 project “RECSYS: Real-Time Embedded Control of Mobile Systems with Distributed Sensing”. Budget: 0.35 MEur;
- 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 Kinetically 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;

Consulting

A. Bicchi is or has been consulting for industrial firms such as 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 presently implemented in racing F1 cars.

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)
- “Meccanismo Elastico Non Lineare A Caratteristica Programmabile” Bicchi Antonio; Catalano Manuel Giuseppe; Grioli Giorgio. Univ Pisa. It. Pat. IT2011PI00057 20110525 (2011-05-25)

- “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 & 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 & Fond. Ist. Italiano di Tecnologia, Application number: PCT/IB2017/052684 (2017-05-09) Published on 23 Novembre 2017 with n. WO 2017/199127

Publications

Antonio Bicchi is author of about 100 articles on journals and 400 chapters in books and peer-reviewed papers presented at conferences.

In June, 2017 Google Scholar reports 15598 citations (8162 since 2012), with indices $h=56$ (42) and $i10=235$ (164). At the same date, Scopus reports 368 documents, 6109 citations, $h=42$.

A complete list of publications is maintained at

[http://www.centropiaggio.unipi.it/publications?f\[author\]=1](http://www.centropiaggio.unipi.it/publications?f[author]=1)