

PERSONAL DETAILS

Address Department of Information Engineering
Research Center "E. Piaggio"
University of Pisa
Largo L. Lazzarino 1
56122 Pisa, Italy

Phone +39050 2217608

E-Mail matteo.bianchi@unipi.it

Website centropiaggio.unipi.it/~bianchi

Google Scholar Google Scholar Profile

MAIN RESEARCH INTERESTS

- Haptics and Haptic Interfaces
- Force and Tactile Sensing
- Assistive and Rehabilitation Robotics
- Biomimetics
- Grasp and Manipulation Analysis
- Human and robotic hands: optimal sensing and control
- Human-Robot Interaction
- Tele-robotics
- Machine Learning applications to Robotics

EDUCATION

PhD in Automatics, Robotics and Bio-Engineering June 2012
University of Pisa, Pisa, Italy

International Doctorate qualification. Dissertation: *On the Role of Haptic Synergies in Modelling the Sense of Touch and in Designing Artificial Haptic Systems*. Main supervisor: Prof. Antonio Bicchi.

MSc in Biomedical Engineering July 2007
University of Pisa, Pisa, Italy

Magna cum laude. Electronic specialization with emphasis on biomedical electronics. Thesis: *Characterization of NO₂ Gas Sensors for Lab On Chip Systems*.

BSc in Biomedical Engineering October 2004
University of Pisa, Pisa, Italy

Magna cum laude. Thesis: *Image Processing for Electrophoresis Gel Applications*.

ACADEMIC APPOINTMENTS

Associate Professor June 2021 – Present
Department of Information Engineering, University of Pisa

Research activity: Robotics, Haptics, Human-Robot Interaction.

Assistant Professor September 2016 – June 2021
Department of Information Engineering, University of Pisa

Research activity: Robotics, Haptics, Human-Robot Interaction.

Research Affiliate Appointment

November 2015 – October 2021

Mayo Clinic, Rochester (MN, USA)

Research activities and experiments for a new robotics-enabled hand prosthesis/system, and its empowerment with haptic feedback

Post-doctoral Researcher

January 2013 – September 2016

Advanced Robotics Department (ADVR), Italian Institute of Technology (IIT)

Research activity on computational and experimental models of tactile interaction and sensorimotor control for robotic and artificial hands.

Research Collaborator

January 2013 – Present

Research Center “E. Piaggio”, University of Pisa

Research activity on tactile perception, robotic manipulation, haptic interfaces, robotic hands, rehabilitation and assistive robotics.

Post-doctoral Researcher

June 2012 – January 2013

Research Center “E. Piaggio”, University of Pisa

Research activity on human tactile interaction and manipulation for synergy-inspired robotic hands.

Visiting Doctoral Researcher

January 2011- June 2011

Laboratory for Computational Sensing and Robotics (LCSR), The Johns Hopkins University, Baltimore (MD, USA)

Research activity on characterization and design of an air-jet lump display for Robot-assisted Minimally Invasive Surgery (RMIS). Supervisor: Prof. Allison M. Okamura

Research Fellowship

November 2007 – December 2008

Research Center “E. Piaggio”, University of Pisa

Research activity on softness rendering, cutaneous and kinaesthetic cues in artificial touch.

AWARDS, HONORS AND PROFESSIONAL SERVICE

• **2010 – IEEE Haptics Symposium**

Best Student Paper and Best Paper Award Finalist for the work “*A new fabric-based softness display*” by Matteo Bianchi, Alessandro Serio, Enzo Pasquale Scilingo and Antonio Bicchi. Waltham (MA, USA).

• **2012 – IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)**

JTCF Novel Technology Paper Award for Amusement Culture for the work “*Synergy-based Optimal Design of Hand Pose Sensing*” by Matteo Bianchi, Paolo Salaris and Antonio Bicchi. Vila Moura (Portugal).

• **2014 – EuroHaptics Conference**

Best Paper Award (Category: Poster Presentation) for the work “*A change in the fingertip contact area induces an illusory displacement of the finger*” by Alessandro Moscatelli, Matteo Bianchi, Alessandro Serio, Omar Al Atassi, Simone Fani, Alexander Terekhov, Vincent Hayward, Marc Ernst, and Antonio Bicchi. Versailles (France).

• **2015 – IEEE RAS World Haptics Conference**

The work “*A Novel Tactile Display for Softness and Texture Rendering in Tele-Operation Tasks*” by Matteo Bianchi, Mattia Poggiani, Alessandro Serio and Antonio Bicchi was selected for the IEEE Transactions on Haptics Referral Program, with invitation to submit an extended journal version.

• **2015 – Automatica.it (SIDRA)**

Best Oral Presentation Award for the contribution “*From Natural to Artificial and Back Again: Human-oriented Approaches and Interfaces for Assistive and Rehabilitation Robotics*”. Bari (Italy).

• **2015 – International Conference on Computer-Aided Engineering**

Best Poster Award for the work “*Finite Element Model of Human Fingertip*” by Maria Laura

D'Angelo, Mariapaola D'Imperio, Matteo Bianchi, Ferdinando Cannella, and Darwin G. Caldwell. Pacengo del Garda, Verona (Italy).

- **2015 – IEEE Transactions on Haptics**
Meritorious Service Award for reviewing activity for the IEEE Transactions on Haptics.
- **2016 – IEEE RAS Haptics Symposium**
Best Paper Award for the work “*A wearable fabric-based display for haptic multi-cue delivery*” by Matteo Bianchi, Edoardo Battaglia, Mattia Poggiani, Simone Ciotti, and Antonio Bicchi. Philadelphia (PA, USA).
- **2017 – IEEE RAS World Haptics Conference**
Best Paper Award Finalist for the work “*Tactile slip and hand displacement: Bending hand motion with tactile illusions*” by M. Bianchi, A. Moscatelli, S. Ciotti, G.C. Bettelani, F. Fioretti, F. Lacquaniti, and A. Bicchi. Munich (Germany).
- **2017 – IEEE RAS World Haptics Conference**
Best Paper and Best Student Paper Award Finalist for the work “*The Rice Haptic Rocker: skin stretch haptic feedback with the Pisa/IIT SoftHand*” by E. Battaglia, J.P. Clark, M. Bianchi, M.G. Catalano, A. Bicchi, and M.K. O'Malley. Munich (Germany).
- **2017 – IEEE Robotics and Automation Society**
Co-Chair of the IEEE RAS Technical Committee on Robotic Hands, Grasping and Manipulation (2017–2022). The committee received the IEEE RAS Most Active Technical Committee Award in 2023.
- **2017 – International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT) 2017**
Best Student Paper Award and Best Paper in Session Robotics for the work “*From Humans to Robots: the Role of Cutaneous Impairment in Human Environmental Constraint Exploitation to Inform the Design of Robotic Hands*” by G. Averta, C. Della Santina, E. Battaglia, S. Ciotti, V. Arapi, S. Fani, and M. Bianchi.
- **2018 – IEEE Robotics and Automation Society**
Vice Chair for Information Dissemination of the IEEE RAS Technical Committee on Haptics (2018–2021). The committee received the IEEE RAS Most Active Technical Committee Award in 2022.
- **2018 – IEEE RAS Haptics Symposium**
The work “*Separating Haptic Guidance from Task Dynamics: A Practical Solution via Cutaneous Devices*” by E. Pezent, S. Fani, J. Bradley, M. Bianchi and M.K. O'Malley was selected among the outstanding papers referred to the IEEE Transactions on Haptics.
- **2018–2023 – Students' Awards**
PhD students supervised/co-supervised by Matteo Bianchi received major national and international recognitions, including:
 - Giuseppe Bruno Averta – Georges Giralt PhD Award 2021
 - Federica Barontini – SIDRA Best PhD Thesis Award 2023; EuroHaptics Society Best PhD Thesis Award 2023
 - Edoardo Battaglia – Best PhD Thesis of the University of Pisa 2018
- **2020 – IEEE RAS Haptics Symposium**
Finalist for the Best IEEE Transactions on Haptics Paper with the work “*On the Role of Lateral Force in Texture-Induced Motion Bias During Reaching Tasks*” by G.C. Bettelani, A. Moscatelli and M. Bianchi.
- **2023 – IEEE Robotics and Automation Letters (RA-L)**
Outstanding Associate Editor Award. Candidates are nominated by the Editor in Chief, Deputy Editor-in-Chief and Senior Editors.

- **2024 – IEEE RAS Haptics Symposium**

Best Paper Award for the work “*SkinSource: A Data-Driven Toolbox for Predicting Touch-Elicited Vibrations in the Upper Limb*” by Neeli Tummala, Gregory Reardon, Simone Fani, Dustin Goetz, Matteo Bianchi, and Yon Visell.

GRANTS AND FUNDINGS

- **2016–2020 – European Commission H2020 Project “SoftPro”**

Principal Investigator of the University of Pisa – Research Center “E. Piaggio” and Work Package Leader (WP1 and WP3) for the project “*SoftPro: Synergy-based Open-source Foundations and Technologies for Prosthetics and RehabilitatiOn*”, European Commission funded project no. 688857, funded under the Horizon 2020 programme (H2020-EU.2.1.1 ICT).

Leader of:

- WP1: *Fundamentals of Synergy-Based Motor Control*
- WP3: *Interfaces from Artificial to Natural*

Managed budget: €1.026.565.

- **2018–2019 – MIT–UNIFI Seed Fund Grant**

Principal Investigator (PI) of the University of Pisa for the MIT–UNIFI Seed Fund Grant supporting new collaborations between the University of Pisa and MIT.

Project title: “*Haptic Assistance in Autonomous Walking for Visually Impaired People*”.

Budget: €8.000.

- **2019 – BIHO 2019 Incentive Grant**

Recipient of the University of Pisa incentive grant “Bando Incentivi di Ateneo per la presentazione di proposte Horizon e Oltre (BIHO 2019)” for the ERC Starting Grant proposal “*ATLAS: Artificial Touch deveLopment from human touch AnalySis*” (Proposal No. 853538).

The proposal successfully passed both ERC evaluation stages and received final panel score A. Awarded funding: €50.000.

- **2019–2024 – H2020 Project “SOPHIA”**

Co-Principal Investigator of the University of Pisa and Work Package Leader of WP4: “*Fellow-Feeling Wearables: Smart and Wearable Monitoring and Feedback Interfaces*” within the project: “*Socio-Physical Interaction Skills for Cooperative Human-Robot Systems in Agile Production*” (SOPHIA).

Funded by the European Union Horizon 2020 Research and Innovation Programme under grant agreement No. 871237.

University of Pisa budget: €770.500.

- **2020–2024 – PRIN 2017 “TIGHT”**

Principal Investigator (PI) of the University of Pisa research unit within the national PRIN 2017 project: “*TIGHT: Tactile InteGration for Humans and arTificial systems*” (protocol 2017SB48FP_002).

Partners: University of Siena, Politecnico di Milano, CNR Pisa, University of Rome Tor Vergata. Managed budget: €170.000.

- **2022–2026 – Tuscany Health Ecosystem (THE)**

Scientific Leader and Work Package Leader within SPOKE 9: “*Robotics and Automation for Health*” of the Tuscany Health Ecosystem (THE), funded by the European Union – Next Generation EU Project ECS00000017.

Subproject 2: “*Assistive and Rehabilitation Robotics and Smart Devices*”.

Host Institution: Department of Information Engineering, University of Pisa.

- **2023–2026 – PRIN 2022 “CONTACT”**

Principal Investigator (PI) of the University of Pisa research unit within the PRIN 2022 project: “*COordination and iNtegration of motion in the TACTile and motor system*” (CONTACT) – project code 202249C5XL_002.

Partners: Sapienza University of Rome, University of Rome Tor Vergata, University of Trento.
Managed budget: €58.640.

- **2024–Present – FIS Starting Grant “PERCEIVING”**

Project Coordinator and recipient of the personal grant: “*Optimally designed haPtic systEmS foR multi-Cue sEnsing and delIVery: foundatIons and techNoloGies*” (PERCEIVING) funded by the Italian Science Fund (FIS) – PE7 Starting Grant 2021 call.

Competitive funding programme for fundamental research activities with acceptance rate below 2%.

Host Institution: Research Center “E. Piaggio”, University of Pisa.

Project duration: 5 years.

Budget: €994.796.

- **2025 – University of Pisa Incentive Grant for Horizon Europe Proposals**

Recipient of a €30.000 incentive grant awarded by the University of Pisa to professors and researchers coordinating or participating in proposals submitted within the funding programmes indicated in the call, which achieved the minimum threshold for funding but were not funded due to budget limitations.

Project title: “*PHOEBE – Personalized longitudinal assessment of multiple sclerosis tHrough multimOdal intErfaces empowerd By artificial intElligence*”.

Funding programme: *HORIZON-EIC-2024-PATHFINDEROPEN-01*.

PUBLICATIONS¹

Journal Articles

1. Valentina Cesari, Giorgia Papini, Andrea Piarulli, Yuri De Pra, Angelo Gemignani, Matteo Bianchi, Danilo Menicucci (2026) *Sensory Substitution and Embodiment Shape Performance and Immersion in Teleoperated Settings*. PSYCHOPHYSIOLOGY, 63. DOI: 10.1111/psyp.70244.
2. Pagnanelli Giulia, Marcello Leonardo, Carbone Marina, Viglialoro Rosanna M., Condino Sara, Simoncini Tommaso, Giannini Andrea, Bianchi Matteo (2026) *A Haptics-Enabled Training System for Robot-Assisted Surgery: From Design to Integration*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 2-14. DOI: 10.1109/mra.2026.3683315.
3. Abbasi Saad Jamshed, Rossi Simone, Lippi Paolo, Orsini Piero Maria, Bracci Riccardo, Catalano Manuel G., Bianchi Matteo (2025) *A Mechatronic Device for a Standardized Execution of the Muscle Shortening Maneuver*. JOURNAL OF BIONIC ENGINEERING, 22, 1085-1095. DOI: 10.1007/s42235-025-00669-w.
4. Pagnanelli Giulia, Zinelli Lucia, Lepora Nathan, Catalano Manuel, Bicchi Antonio, Bianchi Matteo (2025) *Integrating Human-Like Impedance Regulation and Model-Based Approaches for Compliance Discrimination via Biomimetic Optical Tactile Sensors*. IEEE TRANSACTIONS ON ROBOTICS, 1-13. DOI: 10.1109/tro.2024.3522149.
5. Cei G., Artoni A., Bianchi M. (2025) *A review on finite element modelling of finger and hand mechanical behaviour in haptic interactions*. BIOMECHANICS AND MODELING IN MECHANOBIOLOGY, 24, 895-917. DOI: 10.1007/s10237-025-01943-w.
6. Hamad Jafar, Bianchi Matteo, Ferrari Vincenzo (2025) *Integrated Haptic Feedback with Augmented Reality to Improve Pinching and Fine Moving of Objects*. APPLIED SCIENCES, 15, 12. DOI: 10.3390/app15137619.
7. Pagnanelli Giulia, Greco Marco, Susini Paolo, Moscatelli Alessandro, Bianchi Matteo (2025) *Controlling Robot Sliding Relying on Tactile Sensors and Computational Models of Human Touch*. IEEE TRANSACTIONS ON MEDICAL ROBOTICS AND BIONICS, 7, 1755-1764. DOI: 10.1109/tmr.2025.3604093.

¹Publication list generated from the IRIS institutional database managed by CINECA.

8. Susini Paolo, Pagnanelli Giulia, Nam Saekwang, Lepora Nathan F., Bianchi Matteo (2025) *Data-Driven Compliance Discrimination via Biomimetic Soft Optical Tactile Sensors: Implementation and Benchmarking With a Model-Based Approach*. IEEE ROBOTICS AND AUTOMATION LETTERS, 10, 8083-8090. DOI: 10.1109/lra.2025.3582538.
9. Fontana Eleonora, Catalano Manuel G., Grioli Giorgio, Bianchi Matteo, Bicchi Antonio (2025) *Magnetically Induced Skin Stretch Enhances Proprioceptive Feedback in Prosthetics*. IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING, 33, 4599-4613. DOI: 10.1109/tnsre.2025.3633082.
10. Pagnanelli G., Latella G., Catalano M. G., Bianchi M. (2024) *A Pneumatic-Actuated Feel-Through Wearable Haptic Display for Multi-Cue Delivery*. IEEE ROBOTICS AND AUTOMATION LETTERS, 10, 1225-1232. DOI: 10.1109/LRA.2024.3519894.
11. Ivani A. S., Barontini F., Catalano M. G., Grioli G., Bianchi M., Bicchi A. (2024) *Characterization, Experimental Validation and Pilot User Study of the Vibro-Inertial Bionic Enhancement System (VIBES)*. IEEE TRANSACTIONS ON HAPTICS, PP, 1-12. DOI: 10.1109/TOH.2024.3435588.
12. Yuri De Pra, Vincenzo Catrambone, Virginie van Wassenhove, Alessandro Moscatelli, Gaetano Valenza, Matteo Bianchi (2024) *Investigating the Kappa Effect Elicited Through Concurrent Visual and Tactile Stimulation*. IEEE TRANSACTIONS ON HAPTICS, PP, 1-12. DOI: 10.1109/TOH.2024.3482570.
13. Ivani A. S., Catalano M. G., Grioli G., Bianchi M., Visell Y., Bicchi A. (2024) *Tactile Perception in Upper Limb Prostheses: Mechanical Characterization, Human Experiments, and Computational Findings*. IEEE TRANSACTIONS ON HAPTICS, 17, 817-829. DOI: 10.1109/TOH.2024.3436827.
14. Baracca M., Averta G., Bianchi M. (2024) *A general approach for generating artificial human-like motions from functional components of human upper limb movements*. CONTROL ENGINEERING PRACTICE, 148, 1-8. DOI: 10.1016/j.conengprac.2024.105968.
15. Ryan Colleen P., Ciotti Simone, Balestrucci Priscilla, Bicchi Antonio, Lacquaniti Francesco, Bianchi Matteo, Moscatelli Alessandro (2024) *The relativity of reaching: Motion of the touched surface alters the trajectory of hand movements*. ISCIENCE, 27, 1-21. DOI: 10.1016/j.isci.2024.109871.
16. F. Barontini, M. G. Catalano, S. Fani, G. Grioli, M. Bianchi, A. Bicchi (2024) *The CUFF, Clenching Upper-Limb Force Feedback Wearable Device: Design, Characterization and Validation*. IEEE TRANSACTIONS ON HAPTICS, 14, 662-675. DOI: 10.1109/toh.2024.3375010.
17. Pagnanelli G, Ciotti S, Lepora N, Bicchi A, Bianchi M (2023) *Model-Based Compliance Discrimination via Soft Tactile Optical Sensing and Optical Flow Computation: A Biomimetic Approach*. IEEE ROBOTICS AND AUTOMATION LETTERS, 8, 6611-6618. DOI: 10.1109/LRA.2023.3309576.
18. Bonifati Paolo, Baracca Marco, Menolotto Mariangela, Averta Giuseppe, Bianchi Matteo (2023) *A Multi-Modal Under-Sensorized Wearable System for Optimal Kinematic and Muscular Tracking of Human Upper Limb Motion*. SENSORS, 23, 14. DOI: 10.3390/s23073716.
19. Pra Y. D., Catrambone V., van Wassenhove V., Moscatelli A., Valenza G., Bianchi M. (2023) *Altering Time Perception in Virtual Reality through Multimodal Visual-tactile Kappa Effect*. IEEE TRANSACTIONS ON HAPTICS, 16, 518-523. DOI: 10.1109/TOH.2023.3270639.
20. Fani Simone, Ciotti Simone, Pagnanelli Giulia, Moscatelli Alessandro, De Pra Yuri, Bianchi Matteo (2023) *Modulating the Perceived Softness of Real Objects Through Wearable Feel-Through Haptics*. IEEE TRANSACTIONS ON HAPTICS, 16, 543-548. DOI: 10.1109/TOH.2023.3271825.
21. F. Barontini, A. Obermeier, M. G. Catalano, S. Fani, G. Grioli, M. Bianchi, A. Bicchi, E. Jakubowitz (2023) *Tactile Feedback in upper Limb Prosthetics: A Pilot Study on Trans-radial Amputees Comparing Different Haptic Modalities*. IEEE TRANSACTIONS ON HAPTICS, 16, 760-769. DOI: 10.1109/TOH.2023.3322559.

22. Barontini Federica, Van Straaten Meegan, Catalano Manuel G., Thoreson Andrew, Lopez Cesar, Lennon Ryan, Bianchi Matteo, Andrews Karen, Santello Marco, Bicchi Antonio, Zhao Kristin (2023) *Evaluating the effect of non-invasive force feedback on prosthetic grasp force modulation in participants with and without limb loss*. PLOS ONE, 18, 1-17. DOI: 10.1371/journal.pone.0285081.
23. D'Avella Salvatore, Bianchi Matteo, Sundaram Ashok M., Avizzano Carlo Alberto, Roa Máximo A., Tripicchio Paolo (2023) *The Cluttered Environment Picking Benchmark (CEPB) for Advanced Warehouse Automation: Evaluating the Perception, Planning, Control, and Grasping of Manipulation Systems*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 15. DOI: 10.1109/MRA.2023.3310861.
24. Seminara Lucia, Dosen Strahinja, Mastrogiovanni Fulvio, Bianchi Matteo, Watt Simon, Beckerle Philipp, Nanayakkara Thrishantha, Drewing Knut, Moscatelli Alessandro, Klatzky Roberta L, Loeb Gerald E (2023) *A hierarchical sensorimotor control framework for human-in-the-loop robotic hands*. SCIENCE ROBOTICS, 8, 1-15. DOI: 10.1126/scirobotics.add5434.
25. Pra Yuri De, Papetti Stefano, Jarvelainen Hanna, Bianchi Matteo, Fontana Federico (2022) *Effects of vibration direction and pressing force on finger vibrotactile perception and force control*. IEEE TRANSACTIONS ON HAPTICS, 16, 23-32. DOI: 10.1109/TOH.2022.3225714.
26. Fani Simone, Ciotti Simone, Bianchi Matteo (2022) *Multi-cue haptic guidance through wearables for enhancing human ergonomics*. IEEE TRANSACTIONS ON HAPTICS, 15, 115-120. DOI: 10.1109/TOH.2021.3137899.
27. Collodi L., Bacciu D., Bianchi M., Averta G. (2022) *Learning With Few Examples the Semantic Description of Novel Human-Inspired Grasp Strategies From RGB Data*. IEEE ROBOTICS AND AUTOMATION LETTERS, 7, 2573-2580. DOI: 10.1109/LRA.2022.3144520.
28. Kanzler Christoph M, Averta Giuseppe, Schwarz Anne, Held Jeremia P O, Gassert Roger, Bicchi Antonio, Santello Marco, Lamercy Olivier, Bianchi Matteo (2022) *A low-dimensional representation of arm movements and hand grip forces in post-stroke individuals*. SCIENTIFIC REPORTS, 12, 14. DOI: 10.1038/s41598-022-11806-4.
29. Averta G, Iuculano M, Salaris P, Bianchi M (2022) *Optimal Reconstruction of Human Motion From Scarce Multimodal Data*. IEEE TRANSACTIONS ON HUMAN-MACHINE SYSTEMS, 52, 833-842. DOI: 10.1109/THMS.2022.3163184.
30. Li HR, Ford CJ, Bianchi M, Catalano MG, Psomopoulou E, Lepora NF (2022) *BRL/Pisa/IIT Soft-Hand: A Low-Cost, 3D-Printed, Underactuated, Tendon-Driven Hand With Soft and Adaptive Synergies*. IEEE ROBOTICS AND AUTOMATION LETTERS, 7, 8745-8751. DOI: 10.1109/LRA.2022.3187876.
31. Averta G., Barontini F., Catrambone V., Haddadin S., Handjaras G., Held J. P. O., Hu T., Jakubowitz E., Kanzler C. M., Kuhn J., Lamercy O., Leo A., Obermeier A., Ricciardi E., Schwarz A., Valenza G., Bicchi A., Bianchi M. (2021) *U-Limb: A multi-modal, multi-center database on arm motion control in healthy and post-stroke conditions*. GIGASCIENCE, 10, 1-17. DOI: 10.1093/gigascience/giab043.
32. Ciotti S., Ryan C. P., Bianchi M., Lacquaniti F., Moscatelli A. (2021) *A Novel Device Decoupling Tactile Slip and Hand Motion in Reaching Tasks: The HaptiTrack Device*. IEEE TRANSACTIONS ON HAPTICS, 14, 248-253. DOI: 10.1109/TOH.2021.3075024.
33. Arapi V., Della Santina C., Averta G., Bicchi A., Bianchi M. (2021) *Understanding Human Manipulation with the Environment: A Novel Taxonomy for Video Labelling*. IEEE ROBOTICS AND AUTOMATION LETTERS, 6, 6537-6544. DOI: 10.1109/LRA.2021.3094246.
34. Catrambone V., Averta G., Bianchi M., Valenza G. (2021) *Toward brain-heart computer interfaces: A study on the classification of upper limb movements using multisystem directional estimates*. JOURNAL OF NEURAL ENGINEERING, 18, 046002. DOI: 10.1088/1741-2552/abe7b9.

35. Averta G., Della Santina C., Ficuciello F., Roa M. A., Bianchi M. (2021) *Editorial: On the Planning, Control, and Perception of Soft Robotic End-Effectors*. FRONTIERS IN ROBOTICS AND AI, 8, 3. DOI: 10.3389/frobt.2021.795863.
36. Salvietti G., Franco L., Tschiersky M., Wolterink G., Bianchi M., Bicchi A., Barontini F., Catalano M., Grioli G., Poggiani M., Rossi S., Prattichizzo D. (2021) *Integration of a Passive Exoskeleton and a Robotic Supernumerary Finger for Grasping Compensation in Chronic Stroke Patients: The SoftPro Wearable System*. FRONTIERS IN ROBOTICS AND AI, 8, 1-9. DOI: 10.3389/frobt.2021.661354.
37. Averta Giuseppe, Barontini Federica, Valdambri Irene, Cheli Paolo, Bacciu Davide, Bianchi Matteo (2021) *Learning to Prevent Grasp Failure with Soft Hands: From Online Prediction to Dual-Arm Grasp Recovery*. ADVANCED INTELLIGENT SYSTEMS, 4, 9. DOI: 10.1002/aisy.202100146.
38. Ryan C. P., Bettelani G. C., Ciotti S., Parise C., Moscatelli A., Bianchi M. (2021) *The interaction between motion and texture in the sense of touch*. JOURNAL OF NEUROPHYSIOLOGY, 126, 1375-1390. DOI: 10.1152/jn.00583.2020.
39. Bianchi M., Bohg J., Moon H., Platt R., Walker R. (2021) *Robotic Hands, Grasping, and Manipulation [TC Spotlight]*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 28, 131-133. DOI: 10.1109/MRA.2021.3071898.
40. Federica Barontini, Manuel G. Catalano, Matteo Bianchi, Antonio Bicchi, Giorgio Grioli (2021) *Wearable Integrated Soft Haptics in a Prosthetic Socket*. IEEE ROBOTICS AND AUTOMATION LETTERS, 6, 1785-1792. DOI: 10.1109/LRA.2021.3060432.
41. Doria Davide, Fani Simone, Giannini Andrea, Simoncini Tommaso, Bianchi Matteo (2021) *Enhancing the localization of uterine leiomyomas through cutaneous softness rendering for robot-assisted surgical palpation application*. IEEE TRANSACTIONS ON HAPTICS, 14, 503-512. DOI: 10.1109/TOH.2021.3057796.
42. Barontini Federica, Catalano Manuel Giuseppe, Pallottino Lucia, Leporini Barbara, Bianchi Matteo (2021) *Integrating Wearable Haptics and Obstacle Avoidance for the Visually Impaired in Indoor Navigation: A User-Centered Approach*. IEEE TRANSACTIONS ON HAPTICS, 14, 109-122. DOI: 10.1109/TOH.2020.2996748.
43. Nardelli Mimma, Greco Alberto, Bianchi Matteo, Scilingo Enzo Pasquale, Valenza Gaetano (2020) *Classifying Affective Haptic Stimuli through Gender-specific Heart Rate Variability Non-linear Analysis*. IEEE TRANSACTIONS ON AFFECTIVE COMPUTING, 11, 459-469. DOI: 10.1109/TAFFC.2018.2808261.
44. Angelini Franco, Della Santina Cosimo, Garabini Manolo, Bianchi Matteo, Bicchi Antonio (2020) *Control Architecture for Human-Like Motion With Applications to Articulated Soft Robots*. FRONTIERS IN ROBOTICS AND AI, 7, 17. DOI: 10.3389/frobt.2020.00117.
45. Ajoudani A., Albrecht P., Bianchi M., Cherubini A., Del Ferraro S., Fraise P., Fritzsche L., Garabini M., Ranavolo A., Rosen P. H., Sartori M., Tsagarakis N., Vanderborght B., Wischniewski S. (2020) *Smart Collaborative Systems for Enabling Flexible and Ergonomic Work Practices [Industry Activities]*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 27, 169-176. DOI: 10.1109/MRA.2020.2985344.
46. Omalley M., Choi S., Bianchi M., Holz C. (2020) *Messages from the incoming and outgoing editors-in-chief*. IEEE TRANSACTIONS ON HAPTICS, 13, 1-3. DOI: 10.1109/TOH.2020.2977745.
47. Ranavolo A., Ajoudani A., Cherubini A., Bianchi M., Fritzsche L., Iavicoli S., Sartori M., Silveti A., Vanderborght B., Varrecchia T., Draicchio F. (2020) *The sensor-based biomechanical risk assessment at the base of the need for revising of standards for human ergonomics*. SENSORS, 20, 1-15. DOI: 10.3390/s20205750.

48. Gabellieri C., Garabini M., Angelini F., Arapi V., Palleschi A., Catalano M. G., Grioli G., Pallottino L., Bicchi A., Bianchi M. (2020) *Grasp It like a Pro: Grasp of Unknown Objects with Robotic Hands Based on Skilled Human Expertise*. IEEE ROBOTICS AND AUTOMATION LETTERS, 5, 2808-2815. DOI: 10.1109/LRA.2020.2974391.
49. Bettelani Gemma Carolina, Moscatelli Alessandro, Bianchi Matteo (2020) *On the Role of Lateral Force in Texture-Induced Motion Bias During Reaching Tasks*. IEEE TRANSACTIONS ON HAPTICS, 13, 233-238. DOI: 10.1109/TOH.2020.2970927.
50. Bettelani Gemma Carolina, Averta Giuseppe, Catalano Manuel Giuseppe, Leporini Barbara, Bianchi Matteo (2020) *Design and Validation of the Readable Device: a single-cell Electromagnetic Refreshable Braille Display*. IEEE TRANSACTIONS ON HAPTICS, 13, 239-245. DOI: 10.1109/TOH.2020.2970929.
51. Cenceschi Lorenzo, Della Santina Cosimo, Averta Giuseppe, Garabini Manolo, Fu Qiushi, Santello Marco, Bianchi Matteo, Bicchi Antonio (2020) *Modeling Previous Trial Effect in Human Manipulation through Iterative Learning Control*. ADVANCED INTELLIGENT SYSTEMS. DOI: 10.1002/aisy.201900074.
52. Averta G., Della Santina C., Valenza G., Bicchi A., Bianchi M. (2020) *Exploiting upper-limb functional principal components for human-like motion generation of anthropomorphic robots*. JOURNAL OF NEUROENGINEERING AND REHABILITATION, 17, 15. DOI: 10.1186/s12984-020-00680-8.
53. Battaglia E., Clark J., Bianchi M., Catalano M., Bicchi A., O'Malley M. K. (2019) *Skin stretch haptic feedback to convey closure information in anthropomorphic, under-actuated upper limb soft prostheses*. IEEE TRANSACTIONS ON HAPTICS, 12, 508-520. DOI: 10.1109/TOH.2019.2915075.
54. Rossi Matteo, Bianchi Matteo, Battaglia Edoardo, Catalano Manuel Giuseppe, Bicchi Antonio (2019) *Hap-Pro: a wearable haptic device for proprioceptive feedback*. IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, 66, 138-149. DOI: 10.1109/TBME.2018.2836672.
55. Ortenzi V., Controzzi M., Cini F., Leitner J., Bianchi M., Roa M. A., Corke P. (2019) *Robotic manipulation and the role of the task in the metric of success*. NATURE MACHINE INTELLIGENCE, 1, 340-346. DOI: 10.1038/s42256-019-0078-4.
56. Greco A., Guidi A., Bianchi M., Lanata A., Valenza G., Scilingo E. P. (2019) *Brain Dynamics Induced by Pleasant/Unpleasant Tactile Stimuli Conveyed by Different Fabrics*. IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, 23, 2417-2427. DOI: 10.1109/JBHI.2019.2893324.
57. COLELLA NICOLETTA, Bianchi Matteo, Grioli Giorgio, Bicchi Antonio, Catalano Manuel Giuseppe (2019) *A Novel Skin-Stretch Haptic Device for Intuitive Control of Robotic Prostheses and Avatars*. IEEE ROBOTICS AND AUTOMATION LETTERS, 4, 1572-1579. DOI: 10.1109/LRA.2019.2896484.
58. Della Santina Cosimo, Arapi Visar, Averta Giuseppe, Damiani Francesca, Fiore Gaia, Settini Alessandro, Catalano Manuel Giuseppe, Bacciu Davide, Bicchi Antonio, Bianchi Matteo (2019) *Learning from humans how to grasp: a data-driven architecture for autonomous grasping with anthropomorphic soft hands*. IEEE ROBOTICS AND AUTOMATION LETTERS, 4, 1533-1540. DOI: 10.1109/LRA.2019.2896485.
59. Fani Simone, Blasio Katia Di, Bianchi Matteo, Catalano Manuel Giuseppe, Grioli Giorgio, Bicchi Antonio (2019) *Relaying the High-Frequency Contents of Tactile Feedback to Robotic Prosthesis Users: Design, Filtering, Implementation, and Validation*. IEEE ROBOTICS AND AUTOMATION LETTERS, 4, 926-933. DOI: 10.1109/LRA.2019.2894380.
60. Greco Alberto, Valenza Gaetano, Bicchi Antonio, Bianchi Matteo, Scilingo Enzo Pasquale (2019) *Assessment of muscle fatigue during isometric contraction using autonomic nervous system correlates*. BIOMEDICAL SIGNAL PROCESSING AND CONTROL, 51, 42-49. DOI: 10.1016/j.bspc.2019.02.007.

61. Catrambone Vincenzo, Greco Alberto, Averta Giuseppe, Bianchi Matteo, Valenza Gaetano, Scilingo Enzo Pasquale (2019) *Predicting object-mediated gestures from brain activity: an EEG study on gender differences*. IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING, 27, 411-418. DOI: 10.1109/TNSRE.2019.2898469.
62. Giannini Andrea, Bianchi Matteo, Doria Davide, Fani Simone, Caretto Marta, Bicchi Antonio, Simoncini Tommaso (2019) *Wearable haptic interfaces for applications in gynecologic robotic surgery: a proof of concept in robotic myomectomy*. JOURNAL OF ROBOTIC SURGERY, 13, 585-588. DOI: 10.1007/s11701-019-00971-w.
63. Moscatelli A., Bianchi M., Ciotti S., Bettelani G. C., Parise C. V., Lacquaniti F., Bicchi A. (2019) *Touch as an auxiliary proprioceptive cue for movement control*. SCIENCE ADVANCES, 5, 11. DOI: 10.1126/sciadv.aaw3121.
64. Bianchi M., Salvietti G. (2019) *Editorial: Mapping human sensory-motor skills for manipulation onto the design and control of robots*. FRONTIERS IN NEUROBOTICS, 13, 1-3. DOI: 10.3389/fnbot.2019.00001.
65. Averta Giuseppe, Valenza Gaetano, Catrambone Vincenzo, BARONTINI FEDERICA, Scilingo Enzo Pasquale, Bicchi Antonio, Bianchi Matteo (2019) *On the Time-Invariance Properties of Upper Limb Synergies*. IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING, 27, 1397-1406. DOI: 10.1109/TNSRE.2019.2918311.
66. Pezent Evan, Fani Simone, Clark Janelle, Bianchi Matteo, OMalley Marcia K (2019) *Spatially Separating Haptic Guidance from Task Dynamics through Wearable Devices*. IEEE TRANSACTIONS ON HAPTICS, 12, 581-593. DOI: 10.1109/TOH.2019.2919281.
67. Fani Simone, Ciotti Simone, Catalano Manuel G., Grioli Giorgio, Tognetti Alessandro, Valenza Gaetano, Ajoudani Arash, Bianchi Matteo (2018) *Simplifying Telerobotics: Wearability and Teleimpedance Improves Human-Robot Interactions in Teleoperation*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 25, 77-88. DOI: 10.1109/MRA.2017.2741579.
68. Averta Giuseppe, Angelini Franco, Bonilla Manuel, Bianchi Matteo, Bicchi Antonio (2018) *Incrementality and Hierarchies in the Enrollment of Multiple Synergies for Grasp Planning*. IEEE ROBOTICS AND AUTOMATION LETTERS, 3, 2686-2693. DOI: 10.1109/LRA.2018.2829027.
69. Angelini Franco, Santina Cosimo Della, Garabini Manolo, Bianchi Matteo, Gasparri Gian Maria, Grioli Giorgio, Catalano Manuel Giuseppe, Bicchi Antonio (2018) *Decentralized Trajectory Tracking Control for Soft Robots Interacting With the Environment*. IEEE TRANSACTIONS ON ROBOTICS, 34, 924-935. DOI: 10.1109/TRO.2018.2830351.
70. Gasparri Gian Maria, Manara Silvia, Caporale Danilo, Averta Giuseppe, Bonilla Manuel, Marino Hamal, Catalano Manuel, Grioli Giorgio, Bianchi Matteo, Bicchi Antonio, Garabini Manolo (2018) *Efficient Walking Gait Generation via Principal Component Representation of Optimal Trajectories: Application to a Planar Biped Robot With Elastic Joints*. IEEE ROBOTICS AND AUTOMATION LETTERS, 3, 2299-2306. DOI: 10.1109/LRA.2018.2807578.
71. ARAPI VISAR, Della Santina Cosimo, Bacciu Davide, Bianchi Matteo, Bicchi Antonio (2018) *DeepDynamicHand: A Deep Neural Architecture for Labeling Hand Manipulation Strategies in Video Sources Exploiting Temporal Information*. FRONTIERS IN NEUROBOTICS, 12, 1-16. DOI: 10.3389/fnbot.2018.00086.
72. Valenza Gaetano, Greco Alberto, Bianchi Matteo, Nardelli Mimma, Rossi Simone, Scilingo Enzo Pasquale (2018) *EEG oscillations during caress-like affective haptic elicitation*. PSYCHOPHYSIOLOGY, 55, 15. DOI: 10.1111/psyp.13199.
73. Godfrey Sasha Blue, Zhao Kristin D., Theuer Amanda, Catalano Manuel G., Bianchi Matteo, Breighner Ryan, Bhaskaran Divya, Lennon Ryan, Grioli Giorgio, Santello Marco, Bicchi Antonio, Andrews Karen (2018) *The SoftHand Pro: Functional evaluation of a novel, flexible, and robust myoelectric prosthesis*. PLOS ONE, 13, 20. DOI: 10.1371/journal.pone.0205653.

74. Beckerle Philipp, Bianchi Matteo, Castellini Claudio, Salvietti Gionata (2018) *Mechatronic designs for a robotic hand to explore human body experience and sensory-motor skills: a Delphi study*. ADVANCED ROBOTICS, 32, 670-680. DOI: 10.1080/01691864.2018.1489737.
75. Fani Simone, Ciotti Simone, Battaglia Edoardo, Moscatelli Alessandro, Bianchi Matteo (2018) *W-FYD: a Wearable Fabric-based Display for Haptic Multi-Cue Delivery and Tactile Augmented Reality*. IEEE TRANSACTIONS ON HAPTICS, 11, 304-316. DOI: 10.1109/TOH.2017.2708717.
76. BIANCHI MATTEO, VALENZA GAETANO, LANATA' ANTONIO, GRECO ALBERTO, NARDELLI MIMMA, BICCHI ANTONIO, SCILINGO ENZO PASQUALE (2017) *On the Role of Affective Properties in Hedonic and Discriminant Haptic Systems*. INTERNATIONAL JOURNAL OF SOCIAL ROBOTICS, 9, 87-95. DOI: 10.1007/s12369-016-0371-x.
77. DELLA SANTINA COSIMO, BIANCHI MATTEO, AVERTA GIUSEPPE BRUNO, CIOTTI SIMONE, Arapi Visar, FANI SIMONE, BATTAGLIA EDOARDO, Catalano Manuel Giuseppe, Santello Marco, BICCHI ANTONIO (2017) *Postural Hand Synergies during Environmental Constraint Exploitation*. FRONTIERS IN NEUROBOTICS, 11, 14. DOI: 10.3389/fnbot.2017.00041.
78. AVERTA GIUSEPPE BRUNO, DELLA SANTINA COSIMO, BATTAGLIA EDOARDO, Felici Federica, BIANCHI MATTEO, BICCHI ANTONIO (2017) *Unveiling the Principal Modes of Human Upper Limb Movements through Functional Analysis*. FRONTIERS IN ROBOTICS AND AI, 4, 12. DOI: 10.3389/frobt.2017.00037.
79. Beckerle Philipp, Salvietti Gionata, Unal Ramazan, Prattichizzo Domenico, Rossi Simone, Castellini Claudio, Hirche Sandra, Endo Satoshi, Amor Heni Ben, Ciocarlie Matei, Mastrogiovanni Fulvio, Argall Brenna D., BIANCHI MATTEO (2017) *A human-robot interaction perspective on assistive and rehabilitation robotics*. FRONTIERS IN NEUROBOTICS, 11, 6. DOI: 10.3389/fnbot.2017.00024.
80. Godfrey Sasha Blue, Rossi Matteo, Piazza Cristina, Catalano Manuel Giuseppe, Bianchi Matteo, Grioli Giorgio, Zhao Kristin D., Bicchi Antonio (2017) *SoftHand at the CYBATHLON: A user's experience*. JOURNAL OF NEUROENGINEERING AND REHABILITATION, 14, 12. DOI: 10.1186/s12984-017-0334-y.
81. Della Santina Cosimo, Bianchi Matteo, Grioli Giorgio, ANGELINI FRANCO, Catalano Manuel, Garabini Manolo, Bicchi Antonio (2017) *Controlling soft robots: balancing feedback and feed-forward elements*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 24, 75-83. DOI: 10.1109/MRA.2016.2636360.
82. Piazza C., Catalano M. G., Godfrey S. B., Rossi M., Grioli G., Bianchi M., Zhao K., Bicchi A. (2017) *The SoftHand Pro-H: A Hybrid Body-Controlled, Electrically Powered Hand Prosthesis for Daily Living and Working*. IEEE ROBOTICS AND AUTOMATION MAGAZINE, 24, 87-101. DOI: 10.1109/MRA.2017.2751662.
83. Maria Laura D'Angelo, Ferdinando Cannella, Mariapaola D'Imperio, Matteo Bianchi (2017) *A preliminary approach to study the behavior of human fingertip at contact via experimental test and numerical model*. ACTA IMEKO, 6, 81-88. DOI: 10.21014/acta_imeko.v6i2.393.
84. D'Angelo Maria Laura, Cannella Ferdinando, BIANCHI MATTEO, D'Imperio Mariapaola, BATTAGLIA EDOARDO, POGGIANI MATTIA, Rossi Gianluca, BICCHI ANTONIO, Caldwell Darwin G. (2017) *An Integrated Approach to Characterize the Behavior of a Human Fingertip in Contact with a Silica Window*. IEEE TRANSACTIONS ON HAPTICS, 10, 123-129. DOI: 10.1109/TOH.2016.2614679.
85. GRECO ALBERTO, VALENZA GAETANO, NARDELLI MIMMA, BIANCHI MATTEO, Citi Luca, SCILINGO ENZO PASQUALE (2017) *Force-Velocity Assessment of Caress-Like Stimuli Through the Electrodermal Activity Processing: Advantages of a Convex Optimization Approach*. IEEE TRANSACTIONS ON HUMAN-MACHINE SYSTEMS, 47, 91-100. DOI: 10.1109/THMS.2016.2586478.

86. VALENZA GAETANO, GRECO ALBERTO, Citi L., BIANCHI MATTEO, Barbieri R., SCILINGO ENZO PASQUALE (2016) *Inhomogeneous Point-Processes to Instantaneously Assess Affective Haptic Perception through Heartbeat Dynamics Information*. SCIENTIFIC REPORTS, 6, 1-14. DOI: 10.1038/srep28567.
87. Huang Yongqiang, BIANCHI MATTEO, Liarakapis Minas, Sun Yu (2016) *Recent Data Sets on Object Manipulation: A Survey*. BIG DATA, 4, 197-216. DOI: 10.1089/big.2016.0042.
88. Moscatelli Alessandro, BIANCHI MATTEO, Serio Alessandro, Terekhov Alexander, Hayward Vincent, Ernst Marc O., BICCHI ANTONIO (2016) *The Change in Fingertip Contact Area as a Novel Proprioceptive Cue*. CURRENT BIOLOGY, 26, 1159-1163. DOI: 10.1016/j.cub.2016.02.052.
89. Santello Marco, BIANCHI MATTEO, GABICCINI MARCO, Ricciardi Emiliano, Salvietti Gionata, Prattichizzo Domenico, Ernst Marc, Moscatelli Alessandro, J  rntell Henrik, Kappers Astrid M. L., Kyriakopoulos Kostas, Abu Sch  ffer Alin, Castellini Claudio, BICCHI ANTONIO (2016) *Hand synergies: Integration of robotics and neuroscience for understanding the control of biological and artificial hands*. PHYSICS OF LIFE REVIEWS, 17, 1-23. DOI: 10.1016/j.plrev.2016.02.001.
90. BIANCHI MATTEO, Haschke Robert, B  scher Gereon, CIOTTI SIMONE, CARONARO NICOLA, TOGNETTI ALESSANDRO (2016) *A Multi-Modal Sensing Glove for Human Manual-Interaction Studies*. ELECTRONICS, 5, 1-15. DOI: 10.3390/electronics5030042.
91. Fani Simone, BIANCHI MATTEO, Jain Sonal, Pimenta Neto Jos   Sim  es, Boege Scott, Grioli Giorgio, BICCHI ANTONIO, Santello Marco (2016) *Assessment of Myoelectric Controller Performance and Kinematic Behavior of a Novel Soft Synergy-Inspired Robotic Hand for Prosthetic Applications*. FRONTIERS IN NEUROBOTICS, 10, 1-15. DOI: 10.3389/fnbot.2016.00011.
92. Battaglia Edoardo, BIANCHI MATTEO, Altobelli Alessandro, Grioli Giorgio, Catalano Manuel, Serio Alessandro, Santello Marco, BICCHI ANTONIO (2016) *ThimbleSense: a fingertip-wearable tactile sensor for grasp analysis*. IEEE TRANSACTIONS ON HAPTICS, 9, 121-133. DOI: 10.1109/TOH.2015.2482478.
93. Leo Andrea, Handjaras Giacomo, Bianchi Matteo, Marino Hamal, Gabiccini Marco, Guidi Andrea, Scilingo Enzo Pasquale, Pietrini Pietro, Bicchi Antonio, Santello Marco, Ricciardi Emiliano (2016) *A synergy-based hand control is encoded in human motor cortical areas*. ELIFE, 5, 1-32. DOI: 10.7554/eLife.13420.
94. CIOTTI SIMONE, BATTAGLIA EDOARDO, CARONARO NICOLA, BICCHI ANTONIO, TOGNETTI ALESSANDRO, BIANCHI MATTEO (2016) *A Synergy-Based Optimally Designed Sensing Glove for Functional Grasp Recognition*. SENSORS, 16, 1-17. DOI: 10.3390/s16060811.
95. Santello Marco, BIANCHI MATTEO, GABICCINI MARCO, Ricciardi Emiliano, Salvietti Gionata, Prattichizzo Domenico, Ernst Marc, Moscatelli Alessandro, Jorntell Henrik, Kappers Astrid M. L., Kyriakopoulos Kostas, Schaeffer Alin Abu, Castellini Claudio, BICCHI ANTONIO (2016) *Towards a synergy framework across neuroscience and robotics: Lessons learned and open questions. Reply to comments on: "Hand synergies: Integration of robotics and neuroscience for understanding the control of biological and artificial hands"*. PHYSICS OF LIFE REVIEWS, 17, 54-60. DOI: 10.1016/j.plrev.2016.06.007.
96. BIANCHI MATTEO (2016) *A fabric-based approach for wearable haptics*. ELECTRONICS, 5, 1-14. DOI: 10.3390/electronics5030044.
97. BIANCHI MATTEO, Serio Alessandro (2015) *Design and characterization of a fabric-based softness display*. IEEE TRANSACTIONS ON HAPTICS, 8, 152-163. DOI: 10.1109/TOH.2015.2404353.
98. A. Ajoudani, S. B. Godfrey, BIANCHI MATTEO, M. Catalano, GRIOLI GIORGIO, N. G. Tsagarakis, BICCHI ANTONIO (2014) *Exploring Teleimpedance and Tactile Feedback for Intuitive Control of the Pisa/IIT SoftHand*. IEEE TRANSACTIONS ON HAPTICS, 7, 203-215. DOI: 10.1109/TOH.2014.2309142.

99. Gwilliam J C, Bianchi M, Su L K, Okamura A M (2013) *Characterization and Psychophysical Studies of an Air-Jet Lump Display*. IEEE TRANSACTIONS ON HAPTICS, 6, 156-166. DOI: 10.1109/TOH.2012.71.
100. Gwilliam James C., BIANCHI MATTEO, Su Lester K., Okamura Allison M. (2013) *Characterization and psychophysical studies of an air-jet lump display*. IEEE TRANSACTIONS ON HAPTICS, 6, 156-166. DOI: 10.1109/TOH.2012.71.
101. BIANCHI MATTEO, SALARIS PAOLO, BICCHI ANTONIO (2013) *Synergy-based Hand Pose Sensing: Reconstruction Enhancement*. THE INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH, 32, 407-424. DOI: 10.1177/0278364912474078.
102. BIANCHI MATTEO, SALARIS PAOLO, BICCHI ANTONIO (2013) *Synergy-Based Hand Pose Sensing: Optimal Glove Design*. THE INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH, 32, 396-406. DOI: 10.1177/0278364912474079.
103. SCILINGO E.P, BIANCHI M, GRIOLI G, BICCHI A (2010) *Rendering Softness: Integration of kinaesthetic and cutaneous information in a haptic device*. IEEE TRANSACTIONS ON HAPTICS, 3, 109-118. DOI: 10.1109/ToH.2010.2.
104. SCILINGO ENZO PASQUALE, BIANCHI MATTEO, GRIOLI GIORGIO, BICCHI ANTONIO (2010) *Rendering Softness: Integration of Kinesthetic and Cutaneous Information in a Haptic Device*. IEEE TRANSACTIONS ON HAPTICS, 3, 109-118. DOI: 10.1109/TOH.2010.2.
105. LANDI ALBERTO, MAZZOLDI ALBERTO, ANDREONI CHIARA, BIANCHI MATTEO, CAVALLINI ANDREA, LAURINO MARCO, RICOTTI LEONARDO, IULIANO RODOLFO, MATTEOLI BARBARA, CECCHERINI-NELLI LUCA (2008) *Modelling and control of HIV dynamics*. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, 89, 162-168. DOI: 10.1016/j.cmpb.2007.08.003.
106. ALBERTO LANDI, ALBERTO MAZZOLDI, CHIARA ANDREONI, BIANCHI M, ANDREA CAVALLINI, MARCO LAURINO, LEONARDO RICOTTI, RODOLFO IULIANO, BARBARA MATTEOLI, LUCA CECCHERINI-NELLI (2008) *Modelling and control of HIV dynamics*. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, 8, 162-168.

Book Chapters

1. Barontini F., Bettelani G. C., Leporini B., Averta G., Bianchi M. (2022) *A User-Centered Approach to Artificial Sensory Substitution for Blind People Assistance*. Converging Clinical and Engineering Research on Neurorehabilitation IV, 28, 599-603. DOI: 10.1007/978-3-030-70316-5_96.
2. Baracca M., Bonifati P., Nistico Y., Catrambone V., Valenza G., Bicchi A., Averta G., Bianchi M. (2022) *Functional Analysis of Upper-Limb Movements in the Cartesian Domain*. Converging Clinical and Engineering Research on Neurorehabilitation IV, 28, 339-343. DOI: 10.1007/978-3-030-70316-5_54.
3. Franco L., Tschiersky M., Wolterink G., Barontini F., Poggiani M., Catalano M., Grioli G., Bianchi M., Bicchi A., Rossi S., Prattichizzo D., Salvietti G. (2022) *The SoftPro Wearable System for Grasp Compensation in Stroke Patients*. Wearable Robotics: Challenges and Trends, 27, 363-367. DOI: 10.1007/978-3-030-69547-7_59.
4. Ciotti S., Bianchi M., Doria D., Lacquaniti F., Moscatelli A. (2022) *HaptiTrack: A Novel Device for the Evaluation of Tactile Sensitivity in Active and in Passive Tasks*. Converging Clinical and Engineering Research on Neurorehabilitation IV : Proceedings of the 5th International Conference on Neurorehabilitation (ICNR2020), 28, 617-621. DOI: 10.1007/978-3-030-70316-5_99.
5. Arapi V., Zhang Y., Averta G., Santina C. D., Bianchi M. (2021) *Deep learning techniques for modelling human manipulation and its translation for autonomous robotic grasping with soft end-effectors*. AI for Emerging Verticals: Human-robot computing, sensing and networking, 3-28. DOI: 10.1049/PBPC034E.ch1.

6. Averta G., Bettelani G. C., Santina C. D., Bianchi M. (2020) *Kineto-dynamic modeling of human upper limb for robotic manipulators and assistive applications*. Advances in Motor Neuroprostheses, 23-51. DOI: 10.1007/978-3-030-38740-2_3.
7. Bonilla Manuel, Santina Cosimo Della, Rocchi Alessio, Luberto Emanuele, Santaera Gaspare, Farnioli Edoardo, Piazza Cristina, Bonomo Fabio, Brando Alberto, Raugi Alessandro, Catalano Manuel G., Bianchi Matteo, Garabini Manolo, Grioli Giorgio, Bicchi Antonio (2018) *Advanced grasping with the Pisa/IIT softHand*. Robotic grasping and manipulation, 816, 19-38. DOI: 10.1007/978-3-319-94568-2_2.
8. BIANCHI MATTEO, Salaris Paolo, BICCHI ANTONIO (2016) *Synergy-Based Optimal Sensing Techniques for Hand Pose Reconstruction*. Human and robot hands: sensorimotor synergies to bridge the gap between neuroscience and robotics, 259-283. DOI: 10.1007/978-3-319-26706-7_15.
9. BIANCHI MATTEO, Moscatelli Alessandro (2016) *Introduction*. Human and robot hands: sensorimotor synergies to bridge the gap between neuroscience and robotics, 1-5. DOI: 10.1007/978-3-319-26706-7_1.
10. LEO ANDREA, Handjaras Giacomo, MARINO HAMAL, BIANCHI MATTEO, Pietrini Pietro, Ricciardi Emiliano (2016) *The Motor Control of Hand Movements in the Human Brain: Toward the Definition of a Cortical Representation of Postural Synergies*. Human and robot hands: sensorimotor synergies to bridge the gap between neuroscience and robotics, 41-60. DOI: 10.1007/978-3-319-26706-7_4.
11. Moscatelli Alessandro, BIANCHI MATTEO, Serio Alessandro, BICCHI ANTONIO, Ernst Marc O. (2016) *Sensorymotor Synergies: Fusion of Cutaneous Touch and Proprioception in the Perceived Hand Kinematics*. Human and Robot Hands, 87-98. DOI: 10.1007/978-3-319-26706-7_7.
12. BIANCHI MATTEO, SERIO ALESSANDRO, SCILINGO ENZO PASQUALE, BICCHI ANTONIO (2014) *A Fabric-based Approach for Softness Rendering*. Multisensory Softness: Perceived Compliance from Multiple Sources of Information, 219-240. DOI: 10.1007/978-1-4471-6533-0_11.
13. Scilingo E P, Bianchi M, Vanello N, Hartwig V, Landini L, Bicchi A (2012) *Artificially Rendered Cutaneous Cues for a New Generation of Haptic Displays*. Immersive Multimodal Interactive Presence, 171-188.
14. SCILINGO ENZO PASQUALE, BIANCHI MATTEO, VANELLO NICOLA, Hartwig V, LANDINI LUIGI, BICCHI ANTONIO (2012) *Artificially Rendered Cutaneous Cues for a New Generation of Haptic Displays*. Immersive Multimodal Interactive Presence, 171-178. DOI: 10.1007/978-1-4471-2754-3_10.
15. LANDI A, MAZZOLDI A, ANDRONI C, BIANCHI MATTEO, CAVALLINI A, RICOTTI L, CECCHERINI-NELLI LUCA, IAPOCE R. (2006) *Modelling and control of HIV dynamics*. Modelling and Control in Biomedical Systems. Proceedings from the 6th IFAC Symposium, 501-506.

Conference Papers

1. Marcello Leonardo, Pagnanelli Giulia, Lepora Nathan F., Bianchi Matteo (2025) *Enabling Intrinsic Tactile Sensing with Soft Optical Tactile Sensors*. Proceedings of the 2025 33rd Mediterranean Conference on Control and Automation, MED 2025, 453-459. DOI: 10.1109/med64031.2025.11073266.
2. Fontana Eleonora, Catrambone Vincenzo, Catalano Manuel, Bicchi Antonio, Bianchi Matteo (2025) *On the Relation of Skin Stretch and Finger Joint Angle Evolution in Human Hand Grasping Tasks*. Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 14769 LNCS, 331-345. DOI: 10.1007/978-3-031-70061-3_27.

3. Cei Gianmarco, Vena Danilo, Susini Paolo, Bianchi Matteo (2025) *Design and preliminary validation of a tactile feel-through display for virtual curvature rendering exploiting haptic invariants*. Proceedings of the 34th IEEE International Conference on Robot and Human Interactive Communication, RO-MAN 2025, 1085-1090. DOI: 10.1109/ro-man63969.2025.11217740.
4. Fontana Eleonora, Catalano Manuel G., Grioli Giorgio, Bianchi Matteo, Bicchi Antonio (2025) *Towards Magnetically Induced Skin Stretch for Hand Proprioceptive Feedback*. Proceedings of the IEEE 2025 INTERNATIONAL CONFERENCE ON REHABILITATION ROBOTICS, ICORR, 2025, 199-204. DOI: 10.1109/icorr66766.2025.11063127.
5. Baracca Marco, Meixner Andre, Averta Giuseppe, Salaris Paolo, Asfour Tamim, Bianchi Matteo (2025) *A Multivariate Functional Analysis of Inter-Hands Spatiotemporal Coordination in Human Bimanual Tasks and its Implications for Robotics*. Proceedings of the 11th International Conference on Automation, Robotics, and Applications, ICARA 2025, 140-144. DOI: 10.1109/icara64554.2025.10977603.
6. Baracca M., Morello L., Bianchi M. (2025) *A technical integration framework for human-like motion generation in symmetric dual arm picking of large objects*. Proceedings of the 2025 IEEE/SICE International Symposium on System Integration, SII 2025, 984-989. DOI: 10.1109/SII59315.2025.10871061.
7. Zinelli Lucia, Pagnanelli Giulia, Bianchi Matteo (2025) *Human-inspired compliance discrimination with a multi-degrees of freedom robotic manipulator*. Proceedings of the 34th IEEE International Conference on Robot and Human Interactive Communication, RO-MAN 2025, 2465-2470. DOI: 10.1109/ro-man63969.2025.11217847.
8. Tummala Neeli, Reardon Gregory, Fani Simone, Goetz Dustin, Bianchi Matteo, Visell Yon (2024) *SkinSource: A Data-Driven Toolbox for Predicting Touch-Elicited Vibrations in the Upper Limb*. 2024 IEEE Haptics Symposium (HAPTICS), 53-60. DOI: 10.1109/haptics59260.2024.10520852.
9. Ivani A. S., Catalano M. G., Grioli G., Bianchi M., Bicchi A., Barontini F. (2024) *Prosthetic Upper-Limb Sensory Enhancement (PULSE): A Dual Haptic Feedback Device in a Prosthetic Socket*. 2024 IEEE International Conference on Robotics and Automation (ICRA), 9652-9658. DOI: 10.1109/ICRA57147.2024.10610327.
10. Duvert Océane, Pagnanelli Giulia, Moscatelli Alessandro, Bianchi Matteo (2024) *On the role of tactile motion estimates and hand side in bimanual reaching tasks*. 2024 IEEE Haptics Symposium (HAPTICS), 47-52. DOI: 10.1109/haptics59260.2024.10520869.
11. Valenza Gaetano, Alcaniz M., Alfeo A. L., Bianchi Matteo, Carli V., Catrambone Vincenzo, Cimino M. G. C. A., Dudnik G., Duggento A., Ferrante M., Gentili C., Guixeres J., Rossi S., Toschi N., Van Wassenhove V. (2023) *The EXPERIENCE Project: Unveiling Extended-Personal Reality Through Automated VR Environments and Explainable Artificial Intelligence*. 2023 IEEE International Conference on Metrology for eXtended Reality, Artificial Intelligence and Neural Engineering, MetroXRINE 2023 - Proceedings, 757-762. DOI: 10.1109/MetroXRINE58569.2023.10405613.
12. Baracca M, Averta G, Bianchi M (2023) *Estimation of Whole-Body Muscular Activation from an Optimal Set of Scarce Electromyographic Recordings*. Human-Friendly Robotics 2022, 26, 120-130. DOI: 10.1007/978-3-031-22731-8_9.
13. Ivani Alessia Silvia, Barontini Federica, Catalano Manuel G, Grioli Giorgio, Bianchi Matteo, Bicchi Antonio (2023) *VIBES: Vibro-Inertial Bionic Enhancement System in a Prosthetic Socket*. Proceedings of the IEEE 2023 International Conference on Rehabilitation Robotics (ICORR), 2023, 1-6. DOI: 10.1109/ICORR58425.2023.10304768.
14. De Pra Y, Fontana F, Jarvelainen H, Papetti S, Bianchi M, Sonogo M (2022) *Evaluation of rotation gestures in rotary vs. motionless knobs*. Proceedings IEEE Haptics Symposium 2022, 1-6. DOI: 10.1109/HAPTICS52432.2022.9765608.

15. De Pra Y., Catrambone V., Van Wassenhove V., Valenza G., Bianchi M. (2022) *Toward the manipulation of time and space in extended reality: a preliminary study on multimodal Tau and Kappa illusions in the visual-tactile domain*. RO-MAN 2022 - 31st IEEE International Conference on Robot and Human Interactive Communication: Social, Asocial, and Antisocial Robots, 179-184. DOI: 10.1109/RO-MAN53752.2022.9900707.
16. Lorenzini M., Ciotti S., Gandarias J. M., Fani S., Bianchi M., Ajoudani A. (2022) *Performance Analysis of Vibrotactile and Slide-and-Squeeze Haptic Feedback Devices for Limbs Postural Adjustment*. RO-MAN 2022 - 31st IEEE International Conference on Robot and Human Interactive Communication: Social, Asocial, and Antisocial Robots, 707-713. DOI: 10.1109/RO-MAN53752.2022.9900756.
17. Averta Giuseppe, Arapi Visar, Bicchi Antonio, Santina Cosimo della, Bianchi Matteo (2021) *Modeling Human Motor Skills to Enhance Robots' Physical Interaction*. Human-Friendly Robotics 2020: 13th International Workshop, 18, 116-126. DOI: 10.1007/978-3-030-71356-0_9.
18. Bettelani G. C., Fani S., Moscatelli A., Salaris P., Bianchi M. (2021) *Controlling Hand Movements Relying on Tactile Illusions: A Model Predictive Control Framework*. 2021 IEEE World Haptics Conference, WHC 2021, 985-990. DOI: 10.1109/WHC49131.2021.9517188.
19. Miller A. J., Carolina Bettelani G., Fani S., Bianchi M., Brown J. D. (2021) *On the Utility of Affective Feedback in Prosthesis Embodiment*. 2021 IEEE World Haptics Conference, WHC 2021, 874-874. DOI: 10.1109/WHC49131.2021.9517126.
20. Ranavolo A., Chini G., Draicchio F., Silvetti A., Varrecchia T., Fiori L., Tatarelli A., Rosen P. H., Wischniewski S., Albrecht P., Vogt L., Bianchi M., Averta G., Cherubini A., Fritzsche L., Sartori M., Vanderborght B., Govaerts R., Ajoudani A. (2021) *Human-Robot Collaboration (HRC) Technologies for Reducing Work-Related Musculoskeletal Diseases in Industry 4.0*. Lecture Notes in Networks and Systems, 223, 335-342. DOI: 10.1007/978-3-030-74614-8_40.
21. Lepora Nathan F., Ford Chris, Stinchcombe Andrew, Brown Alfred, Lloyd John, Catalano Manuel G., Bianchi Matteo, Ward-Cherrier Benjamin (2021) *Towards integrated tactile sensorimotor control in anthropomorphic soft robotic hands*. Proceedings of 2021 IEEE International Conference on Robotics and Automation (ICRA), 1622-1628. DOI: 10.1109/ICRA48506.2021.9561350.
22. Cavaliere L., Catrambone V., Bianchi M., Rocha A. P., Valenza G. (2021) *Characterization of upper limb movement-related EEG dynamics through fractional integrated autoregressive modeling*. 43rd Annual international conference of the IEEE Engineering in medicine & biology society : proceedings, 2021, 5987-5990. DOI: 10.1109/EMBC46164.2021.9630051.
23. Averta G., Abbinante M., Orsini P., Felici F., Lippi P., Bicchi A., Catalano M. G., Bianchi M. (2020) *A novel mechatronic system for evaluating elbow muscular spasticity relying on Tonic Stretch Reflex Threshold estimation*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2020, 3839-3843. DOI: 10.1109/EMBC44109.2020.9176011.
24. Ward-Cherrier B., Conradt J., Catalano M. G., Bianchi M., Lepora N. F. (2020) *A miniaturised neuromorphic tactile sensor integrated with an anthropomorphic robot hand*. IEEE International Conference on Intelligent Robots and Systems, 9883-9889. DOI: 10.1109/IROS45743.2020.9341391.
25. Angelini Franco, Bianchi Matteo, Garabini Manolo, Bicchi Antonio, Della Santina Cosimo (2020) *Iterative Learning Control as a Framework for Human-Inspired Control with Bio-mimetic Actuators*. 9th International Conference on Biomimetic and Biohybrid Systems, Living Machines 2020, 28 July 2020 - 30 July 2020, 12413, 12-16. DOI: 10.1007/978-3-030-64313-3_2.
26. Arapi V., Zhang Y., Averta G., Catalano M. G., Rus D., Santina C. D., Bianchi M. (2020) *To grasp or not to grasp: An end-to-end deep-learning approach for predicting grasping failures in soft hands*. 2020 3rd IEEE International Conference on Soft Robotics, RoboSoft 2020, 653-660. DOI: 10.1109/RoboSoft48309.2020.9116041.

27. Averta G., Caporale D., Santina C. D., Bicchi A., Bianchi M. (2020) *A technical framework for human-like motion generation with autonomous anthropomorphic redundant manipulators*. Proceedings - IEEE International Conference on Robotics and Automation, 3853-3859. DOI: 10.1109/ICRA40945.2020.9196937.
28. Piazza C., Catalano M. G., Bianchi M., Ricciardi E., Prattichizzo D., Haddadin S., Luft A. R., Lamercy O., Gassert R., Jakubowitz E., Van Der Kooij H., Tonis F., Bonomo F., de Jonge B., Ward T., Zhao K. D., Santello M., Bicchi A. (2019) *The SoftPro project: Synergy-based open-source technologies for prosthetics and rehabilitation*. Wearable Robotics: Challenges and Trends, 22, 370-374. DOI: 10.1007/978-3-030-01887-0_71.
29. Ghiasi Shadi, Valenza Getano, Morelli Maria Sole, Bianchi Matteo, Scilingo Enzo Pasquale (2019) *The Role of Haptic Stimuli on Affective Reading: a Pilot Study*. Proceedings of the 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), 4938-4941. DOI: 10.1109/EMBC.2019.8857337.
30. Schwarz Anne, Averta Giuseppe, Veerbeek Janne M., Luft Andreas R., Held Jeremia P. O., Valenza Gaetano, Biechi Antonio, Bianchi Matteo (2019) *A functional analysis-based approach to quantify upper limb impairment level in chronic stroke patients: a pilot study*. Proceedings of the 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), 4198-4204. DOI: 10.1109/EMBC.2019.8857732.
31. Clark J. P., Lentini G., Barontini F., Catalano M. G., Bianchi M., O'Malley M. K. (2019) *On the role of wearable haptics for force feedback in teleimpedance control for dual-arm robotic teleoperation*. Proceedings - IEEE International Conference on Robotics and Automation, 2019-, 5187-5193. DOI: 10.1109/ICRA.2019.8793652.
32. Bettelani G. C., Moscatelli A., Bianchi M. (2019) *Contact with Sliding over a Rotating Ridged Surface: The Turntable Illusion*. 2019 IEEE World Haptics Conference, WHC 2019, 562-567. DOI: 10.1109/WHC.2019.8816119.
33. Averta Giuseppe, Battaglia Edoardo, Della Santina Cosimo, Catalano Manuel G., Bianchi Matteo (2019) *A Synergistic Behavior Underpins Human Hand Grasping Force Control During Environmental Constraint Exploitation*. Converging Clinical and Engineering Research on Neurorehabilitation III. ICNR 2018, 21, 67-71. DOI: 10.1007/978-3-030-01845-0_13.
34. Simone Ciotti, Teng Sun, Edoardo Battaglia, Antonio Bicchi, Hongbin Liu, Matteo Bianchi (2019) *Soft tactile sensing: retrieving force, torque and contact point information from deformable surfaces*. PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION (ICRA 2019), 4290-4296. DOI: 10.1109/ICRA.2019.8794087.
35. Averta Giuseppe, Angelini Franco, Bicchi Antonio, Valenza Gaetano, Bianchi Matteo (2019) *On the role of postural synergies for grasp force generation and upper limb motion control*. Converging Clinical and Engineering Research on Neurorehabilitation III, 21, 344-348. DOI: 10.1007/978-3-030-01845-0_69.
36. Kieliba P. J., Veltink P. H., Lisini Baldi T., Prattichizzo D., Santaera G., Bicchi A., Bianchi M., Van Beijnum B. J. F. (2019) *Comparison of Three Hand Pose Reconstruction Algorithms Using Inertial and Magnetic Measurement Units*. 2018 IEEE-RAS International Conference on Humanoid Robots, 676-683. DOI: 10.1109/HUMANOIDS.2018.8624929.
37. Battaglia E., Catalano M. G., Grioli G., Bianchi M., Bicchi A. (2018) *ExoSense: Measuring Manipulation in a Wearable Manner*. Proceedings - IEEE International Conference on Robotics and Automation (ICRA 2018), 2774-2781. DOI: 10.1109/ICRA.2018.8460498.
38. Pezent Evan, Fani Simone, Bradley Joshua, Bianchi Matteo, O' Malley Marcia Kilchenman (2018) *Separating haptic guidance from task dynamics: A practical solution via cutaneous devices*. IEEE Haptics Symposium, HAPTICS, 2018, 20-25. DOI: 10.1109/HAPTICS.2018.8357147.

39. Bianchi Matteo, Averta Giuseppe, Battaglia Edoardo, Rosales Carlos, Bonilla Manuel, Tondo Alessandro, POGGIANI MATTIA, Santaera Gaspare, Ciotti Simone, Catalano Manuel G., Bicchi Antonio (2018) *Touch-Based Grasp Primitives for Soft Hands: Applications to Human-to-Robot Handover Tasks and Beyond*. Proceedings - IEEE International Conference on Robotics and Automation, 7794-7801. DOI: 10.1109/ICRA.2018.8463212.
40. CATRAMBONE VINCENZO, Greco Alberto, Averta Giuseppe, Bianchi Matteo, Vanello Nicola, Bicchi Antonio, Valenza Gaetano, Scilingo Enzo Pasquale (2018) *EEG Processing to Discriminate Transitive-Intransitive Motor Imagery Tasks: Preliminary Evidences using Support Vector Machines*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2018-, 231-234. DOI: 10.1109/EMBC.2018.8512239.
41. Catrambone Vincenzo, Greco Alberto, Averta Giuseppe, Bianchi Matteo, Bicchi Antonio, Scilingo Enzo Pasquale, Valenza Gaetano (2018) *EEG Complexity Maps to Characterise Brain Dynamics during Upper Limb Motor Imagery*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2018-, 3060-3063. DOI: 10.1109/EMBC.2018.8512912.
42. Bettelani Gemma Carolina, Moscatelli Alessandro, Bianchi Matteo (2018) *Towards a Technology-Based Assessment of Sensory-Motor Pathological States Through Tactile Illusions*. Proceedings of the 2018 7th IEEE International Conference on Biomedical Robotics and Biomechanics (Biorob), 225-229. DOI: 10.1109/BIOROB.2018.8487623.
43. Averta Giuseppe, Della Santina Cosimo, Battaglia Edoardo, Ciotti Simone, ARAPI VISAR, Fani Simone, Bianchi Matteo (2018) *From humans to robots: The role of cutaneous impairment in human environmental constraint exploitation to inform the design of robotic hands*. Proceedings on the 2017 9th International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT), 179-184. DOI: 10.1109/ICUMT.2017.8255117.
44. Ciotti Simone, Battaglia Edoardo, Oikonomidis Iason, Makris Alexandros, Tsoli Aggeliki, Bicchi Antonio, Argyros Antonis A., Bianchi Matteo (2017) *Synergy-driven performance enhancement of vision-based 3D hand pose reconstruction*. Wireless mobile communication and healthcare : 6th International conference, MobiHealth 2016, Milan, Italy, November 14-16, 2016, Proceedings, 192, 328-336. DOI: 10.1007/978-3-319-58877-3_42.
45. BIANCHI MATTEO, Moscatelli Alessandro, CIOTTI SIMONE, Bettelani Gemma Carolina, Fioretti Federica, Lacquaniti Francesco, BICCHI ANTONIO (2017) *Tactile slip and hand displacement: Bending hand motion with tactile illusions*. 2017 IEEE World Haptics Conference (WHC), 96-100. DOI: 10.1109/WHC.2017.7989883.
46. BATTAGLIA EDOARDO, Clark Janelle P., BIANCHI MATTEO, Catalano Manuel G., BICCHI ANTONIO, O'Malley Marcia K. (2017) *The Rice Haptic Rocker: Skin stretch haptic feedback with the Pisa/IIT SoftHand*. 2017 IEEE World Haptics Conference (WHC), 7-12. DOI: 10.1109/WHC.2017.7989848.
47. GARABINI MANOLO, Santina Cosimo Della, BIANCHI MATTEO, CATALANO MANUEL GIUSEPPE, GRIOLI GIORGIO, BICCHI ANTONIO (2017) *Soft Robots that Mimic the Neuromusculoskeletal System*. Converging Clinical and Engineering Research on Neurorehabilitation II: Proceedings of the 3rd International Conference on NeuroRehabilitation (ICNR2016), 15, 259-263. DOI: 10.1007/978-3-319-46669-9_45.
48. Greco Alberto, Nardelli Mimma, Bianchi Matteo, Valenza Gaetano, Scilingo Enzo Pasquale (2017) *Recognition of affective haptic stimuli conveyed by different fabrics using EEG-based sparse SVM*. RTSI 2017 - IEEE 3rd International Forum on Research and Technologies for Society and Industry, Conference Proceedings, 1-5. DOI: 10.1109/RTSI.2017.8065933.
49. Greco Alberto, Guidi Andrea, Felici Federica, Leo Andrea, Ricciardi Emiliano, Bianchi Matteo, Bicchi Antonio, Citi Luca, Valenza Gaetano, Scilingo Enzo Pasquale (2017) *Muscle fatigue assessment through electrodermal activity analysis during isometric contraction*. Proceedings of

the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 398-401. DOI: 10.1109/EMBC.2017.8036846.

50. Guidi Andrea, Greco Alberto, Felici Federica, Leo Andrea, Ricciardi Emiliano, Bianchi Matteo, Bicchi Antonio, Valenza Gaetano, Scilingo Enzo Pasquale (2017) *Heart rate variability analysis during muscle fatigue due to prolonged isometric contraction*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 1324-1327. DOI: 10.1109/EMBC.2017.8037076.
51. CASINI SIMONA, Tincani Vinicio, Averta Giuseppe, Poggiani Mattia, Della Santina Cosimo, Battaglia Edoardo, Catalano Manuel G., Bianchi Matteo, Grioli Giorgio, Bicchi Antonio (2017) *Design of an under-actuated wrist based on adaptive synergies*. Proceedings - IEEE International Conference on Robotics and Automation (ICRA 2017), 6679-6686. DOI: 10.1109/ICRA.2017.7989789.
52. Godfrey Sasha B., BIANCHI MATTEO, Zhao Kristin, CATALANO MANUEL GIUSEPPE, Breighner Ryan, Theuer Amanda, Andrews Karen, Grioli Giorgio, Santello Marco, BICCHI ANTONIO (2017) *The SoftHand Pro: Translation from Robotic Hand to Prosthetic Prototype*. Converging Clinical and Engineering Research on Neurorehabilitation II: Proceedings of the 3rd International Conference on NeuroRehabilitation (ICNR2016), 15, 469-473. DOI: 10.1007/978-3-319-46669-9_78.
53. NARDELLI MIMMA, GRECO ALBERTO, BIANCHI MATTEO, SCILINGO ENZO PASQUALE, VALENZA GAETANO (2016) *On the pleasantness of a haptic stimulation: How different textures can be recognized through heart rate variability nonlinear analysis*. Proceedings of 38th Annual International Conference of the IEEE Engineering in medicine and Biology Society (EMBC), Volume 2016, 3560-3563. DOI: 10.1109/EMBC.2016.7591497.
54. CONDINO SARA, VIGLIALORO ROSANNA MARIA, Fani Simone, BIANCHI MATTEO, MORELLI LUCA, FERRARI MAURO, BICCHI ANTONIO, FERRARI VINCENZO (2016) *Tactile augmented reality for arteries palpation in open surgery training*. Medical Imaging and Augmented Reality : 7th International Conference, MIAR 2016, Bern, Switzerland, August 24-26, 2016 : proceedings, 9805, 186-197. DOI: 10.1007/978-3-319-43775-0_17.
55. BIANCHI MATTEO, BATTAGLIA EDOARDO, POGGIANI MATTIA, CIOTTI SIMONE, BICCHI ANTONIO (2016) *A Wearable Fabric-based display for haptic multi-cue delivery*. 2016 IEEE Haptics Symposium (HAPTICS), 2016-, 277-283. DOI: 10.1109/HAPTICS.2016.7463190.
56. BIANCHI MATTEO, VALENZA GAETANO, GRECO ALBERTO, NARDELLI MIMMA, Battaglia Edoardo, LANATA' ANTONIO, BICCHI ANTONIO, SCILINGO ENZO PASQUALE (2016) *Towards a Novel Generation of Haptic and Robotic Interfaces: Integrating Active Physiology in Human-Robot Interaction*. Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) 2016, 125-131. DOI: 10.1109/ROMAN.2016.7745100.
57. Godfrey Sasha B., BIANCHI MATTEO, BICCHI ANTONIO, Santello Marco (2016) *Influence of force feedback on grasp force modulation in prosthetic applications: A preliminary study*. Proceedings of the 2016 IEEE 38th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 5439-5442. DOI: 10.1109/EMBC.2016.7591957.
58. GRECO ALBERTO, VALENZA GAETANO, NARDELLI MIMMA, BIANCHI MATTEO, LANATA' ANTONIO, SCILINGO ENZO PASQUALE (2015) *Electrodermal activity analysis during affective haptic elicitation*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2015-, 5777-5780. DOI: 10.1109/EMBC.2015.7319705.
59. D'Angelo Maria Laura, Cannella Ferdinando, Memeo Mariacarla, D'Imperio Mariapaola, BIANCHI MATTEO (2015) *Preliminary fingertip pressure area distribution via experimental test and numerical model*. XXI IMEKO World Congress "Measurement in Research and Industry".

60. NARDELLI MIMMA, VALENZA GAETANO, BIANCHI MATTEO, GRECO ALBERTO, LANATA' ANTONIO, BICCHI ANTONIO, SCILINGO ENZO PASQUALE (2015) *Gender-specific velocity recognition of caress-like stimuli through nonlinear analysis of Heart Rate Variability*. Proceedings of the 7th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC2015), 298-301. DOI: 10.1109/EMBC.2015.7318359.
61. Casini Simona, Morvidoni Matteo, BIANCHI MATTEO, CATALANO MANUEL GIUSEPPE, GRIOLI GIORGIO, BICCHI ANTONIO (2015) *Design and realization of the CUFF - clenching upper-limb force feedback wearable device for distributed mechano-tactile stimulation of normal and tangential skin forces*. Proceedings of the IEEE International Conference of Intelligent Robots and Systems (IROS2015), 1186-1193. DOI: 10.1109/IROS.2015.7353520.
62. BATTAGLIA EDOARDO, BIANCHI MATTEO, D'Angelo Maria Laura, D'Imperio Mariapaola, Cannella Ferdinando, SCILINGO ENZO PASQUALE, BICCHI ANTONIO (2015) *A Finite element model of tactile flow for softness perception*. proc. 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC2015), 2430-2433. DOI: 10.1109/EMBC.2015.7318884.
63. ALTOBELLI ALESSANDRO, BIANCHI MATTEO, CATALANO MANUEL GIUSEPPE, SERIO ALESSANDRO, Baud Bovy Gabriel, BICCHI ANTONIO (2015) *An instrumented manipulandum for human grasping studies*. IEEE International Conference on Rehabilitation Robotics, 2015, 169-174. DOI: 10.1109/ICORR.2015.7281194.
64. Miguel E., D'Angelo M. L., Cannella F., BIANCHI MATTEO, Memeo M., BICCHI ANTONIO, Caldwell D. G., Otaduy M. A. (2015) *Characterization of Nonlinear Finger Pad Mechanics for Tactile Rendering*. proc. IEEE World Haptics Conference, 63-68. DOI: 10.1109/WHC.2015.7177692.
65. BIANCHI MATTEO, Poggiani Mattia, SERIO ALESSANDRO, BICCHI ANTONIO (2015) *A novel tactile display for softness and texture rendering in tele-operation tasks*. IEEE World Haptics Conference, WHC 2015, 49-56. DOI: 10.1109/WHC.2015.7177690.
66. VALENZA GAETANO, GRECO ALBERTO, NARDELLI MIMMA, BIANCHI MATTEO, LANATA' ANTONIO, Rossi Simone, SCILINGO ENZO PASQUALE (2015) *Electroencephalographic spectral correlates of caress-like affective haptic stimuli*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2015, 4733-4736. DOI: 10.1109/EMBC.2015.7319451.
67. MOSCATELLI ALESSANDRO, BIANCHI MATTEO, SERIO ALESSANDRO, Atassi A. O., Fani S., Terekhov A., Hayward V., Ernst M., BICCHI ANTONIO (2014) *A change in the fingertip contact area induces an illusory displacement of the finger*. Proc. Eurohaptics, 72-79. DOI: 10.1007/978-3-662-44196-1_10.
68. SERIO ALESSANDRO, BIANCHI MATTEO, GABICCINI MARCO, BICCHI ANTONIO (2014) *The tactile toolbox*. Proceedings of 2014 IEEE Haptics Symposium (HAPTICS), 1. DOI: 10.1109/HAPTICS.2014.6775573.
69. BATTAGLIA EDOARDO, GRIOLI GIORGIO, CATALANO MANUEL GIUSEPPE, BIANCHI MATTEO, SERIO ALESSANDRO, M. Santello, BICCHI ANTONIO (2014) *ThimbleSense: A new wearable tactile device for human and robotic fingers*. Proceedings of 2014 IEEE Haptics Symposium (HAPTICS), 1. DOI: 10.1109/HAPTICS.2014.6775571.
70. Godfrey Sasha BLUE, AJODANI ARASH, BIANCHI MATTEO, CATALANO MANUEL GIUSEPPE, GRIOLI GIORGIO, BICCHI ANTONIO (2014) *Exploring haptic feedback for the Pisa/IIT SoftHand*. Proceedings of 2014 IEEE Haptics Symposium (HAPTICS), 1. DOI: 10.1109/HAPTICS.2014.6775572.
71. ALTOBELLI ALESSANDRO, BIANCHI MATTEO, SERIO ALESSANDRO, Baud Bovy G, GABICCINI MARCO, BICCHI ANTONIO (2014) *Three-digit grasp haptic device with variable contact stiffness for rehabilitation and human grasping studies*. Proc. 22nd Mediterranean Conference of Control and Automation (MED) 2014, 346-350. DOI: 10.1109/MED.2014.6961395.

72. Bianchi M., Carbonaro N., Battaglia E., Lorussi F., Bicchi A., De Rossi D., Tognetti A. (2014) *Exploiting hand kinematic synergies and wearable under-sensing for hand functional grasp recognition*. Proceedings of EAI 4th International Conference on Wireless Mobile Communication and Healthcare (Mobihealth), 168-171. DOI: 10.1109/MOBIHEALTH.2014.7015937.
73. BIANCHI MATTEO, VALENZA GAETANO, SERIO ALESSANDRO, LANATA' ANTONIO, L. Greco, M. Nardelli, SCILINGO ENZO PASQUALE, BICCHI ANTONIO (2014) *Design and preliminary affective characterization of a novel fabric-based tactile display*. Proceedings 2014 IEEE Haptics Symposium (HAPTICS), 591-596. DOI: 10.1109/HAPTICS.2014.6775522.
74. Gabiccini M, Stillfried G, Marino H, Bianchi M (2013) *A data-driven kinematic model of the human hand with soft-tissue artifact compensation mechanism for grasp synergy analysis*. Proc. 2013 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 3738-3745. DOI: 10.1109/IROS.2013.6696890.
75. GABICCINI MARCO, Stillfried G, MARINO HAMAL, BIANCHI MATTEO (2013) *A data-driven kinematic model of the human hand with soft-tissue artifact compensation mechanism for grasp synergy analysis*. Proceedings of the 2013 IEEE/RSJ IROS Conference, 3738-3745. DOI: 10.1109/IROS.2013.6696890.
76. SERIO ALESSANDRO, BIANCHI MATTEO, BICCHI ANTONIO (2013) *A Device for Mimicking the Contact Force/Contact Area Relationship of Different Materials with Applications to Softness Rendering*. Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems, 4484-4490. DOI: 10.1109/IROS.2013.6697001.
77. BIANCHI MATTEO, SALARIS PAOLO, Turco A, CARBONARO NICOLA, Bicchi A. (2012) *On the Use of Postural Synergies to Improve Human Hand Pose Reconstruction*. Proc. Haptics Symposium, 91-98. DOI: 10.1109/HAPTIC.2012.6183775.
78. Gwilliam James C, Degirmenci Alperen, BIANCHI MATTEO, Okamura Allison M. (2012) *Design and control of an air-jet lump display*. Haptics Symposium (HAPTICS), 2012 IEEE, 45-49. DOI: 10.1109/HAPTIC.2012.6183768.
79. BIANCHI MATTEO, SALARIS PAOLO, Bicchi A. (2012) *Synergy-based Optimal Design of Hand Pose Sensing*. Proc. International Conference of Intelligent Robot and Systems - IROS 2012, 3929-3935. DOI: 10.1109/IROS.2012.6385933.
80. BIANCHI MATTEO, Gwilliam James C., Degirmenci Alperen, Okamura Allison M. (2011) *Characterization of an air jet haptic lump display*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2011, 3467-3470. DOI: 10.1109/IEMBS.2011.6090937.
81. BIANCHI MATTEO, SCILINGO ENZO PASQUALE, BICCHI ANTONIO (2011) *Haptic interfaces: new strategies to convey tactile information*. Automatica.it 2011.
82. BIANCHI M, SERIO A, SCILINGO E.P, BICCHI A (2010) *A new fabric based softness display*. Symposium on Haptic Interfaces for Virtual Environments and Teleoperator Systems, Waltham, Massachusetts, USA, March 25-16 2010.
83. BIANCHI M, GRIOLI G, SCILINGO E.P, SANTELLO M, BICCHI A (2010) *Validation of a Virtual Reality Environment to Study Anticipatory Modulation of Digit Forces and Position*. Eurohaptics 2010, Amsterdam (The Netherlands), July, 8 - 10 2010.
84. BIANCHI MATTEO, G. Grioli, SCILINGO ENZO PASQUALE, A. Bicchi, M. Santello (2010) *Validation of a Virtual Reality Environment to Study Anticipatory Modulation of Digit Forces and Position*. Proc. of EuroHaptics 2010, 6192/2010, 136-143. DOI: 10.1007/978-3-642-14075-4_20.
85. BIANCHI MATTEO, A. Serio, SCILINGO ENZO PASQUALE, BICCHI ANTONIO (2010) *A New Fabric Based Softness Display*. Proc. Symposium on Haptic Interfaces for Virtual Environments and Teleoperator Systems, 108-112. DOI: 10.1109/HAPTIC.2010.5444668.

86. BIANCHI M, SERIO A, SCILINGO E.P, BICCHI A (2009) *A new softness display based on bi-elastic fabric*. In World Haptics Proc., Salt Lake City, USA, 2009.
87. BIANCHI M, SERIO A, SCILINGO E.P, BICCHI A (2009) *Rendering softness: a new fabric yielding display. I*. Workshop for young researchers on human-friendly robotics, Symposium, Sestri Levante (Ge), Italy, December 3 2009.
88. BIANCHI MATTEO, SCILINGO ENZO PASQUALE, Serio A., BICCHI ANTONIO (2009) *A new softness display based on bi-elastic fabric*. Proceedings - 3rd Joint EuroHaptics Conference and Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, World Haptics 2009, 382-383. DOI: 10.1109/WHC.2009.4810905.
89. BIANCHI MATTEO, A. SERIO, SCILINGO ENZO PASQUALE, BICCHI ANTONIO (2009) *Rendering softness: a new fabric yielding display*. PROC. WORKSHOP FOR YOUNG RESEARCHERS ON HUMAN-FRIENDLY ROBOTICS SYMPOSIUM.