Claudio Pacchierotti

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Birth date: 27 August 1987

Current position

Chargé de recherche (CR), **Centre National de la Recherche Scientifique (CNRS)**, IRISA (UMR 6074), Équipe Rainbow, Rennes, France (**from Dec 2016**; CR2 in 2016–2017 and CRCN from 2018).

Past positions

2022	Visiting Professor at Sapienza Università di Roma, Dipartimento di Ingegneria informatica, automatica e gestionale (DIAG), Rome, Italy (Mar – Apr 2022).
2015 – 2016	Postdoctoral Researcher at the Dept. of Advanced Robotics, **Italian Institute of Technology**, Genova, Italy (Jun 2015 – Nov 2016).
2015	Postdoctoral Researcher at the Dept. of Information Engineering and Mathematics, University of Siena, Siena, Italy (Jan 2015 – May 2015).
2012 – 2015	Visiting Scientist at the Institute for Biomedical Technology and Technical Medicine (MIRA), University of Twente, Enschede, The Netherlands, under the supervision of Prof. S. Misra (Jul 2015, Aug 2015, Nov 2014, Jul 2013).
2012 – 2014	Ph.D. student at the Dept. of Information Engineering and Mathematics, University of Siena, Siena, Italy, and at the Dept. of Advanced Robotics, Italian Institute of Technology, Genova, Italy, under the supervision of Prof. D. Prattichizzo and Prof. D. G. Caldwell (Jan 2012 – Dec 2014).
2014	Visiting Ph.D. student at the Dept. of Mechanical Engineering and Applied Mechanics, Haptics Group, GRASP Laboratory, **University of Pennsylvania**, Philadelphia, PA, USA, under the supervision of Prof. K. J. Kuchenbecker (Jan 2014 – Jul 2014).
2013	Visiting Ph.D. student at the Dept. of Innovation in Mechanics and Management (DIMEG), University of Padua, Padova, Italy, under the supervision of Prof. G. Rosati (Jan 2013).
2010 – 2011	Exchange graduate student at Karlstad University, Karlstad, Sweden (Aug 2010 – Feb 2011).

Education

2022	**Habilitation à diriger les recherches (04 Feb 2022)**, Univ. Rennes 1, France. Field: Automation, Production and Robotics, Dissertation: "Cutaneous haptic feedback for robotics and Virtual Reality." PDF
2014	Ph.D. in Information Engineering (18 Dec 2014), Univ. Siena, Italy. Specialization: Automatic Control and Robotics, Dissertation: "Cutaneous haptic feedback in robotic teleoperation."
2011	M.S. in Computer Engineering *con lode* (26 Sept 2011), Univ. Siena, Italy. Specialization: Robotics and Automation, Dissertation: "Tactile feedback as a sensory subtraction technique in haptics."
2009	B.S. in Information Engineering *con lode* (18 Oct 2009), University of Siena, Siena, Italy. Specialization: Robotics and Automation, Dissertation: "RemoTouch: a novel system for remote tactile interaction."

Selected Awards and Honors

2024	Best Poster Award - Honorable Mention, Eurohaptics 2024, Lille, France.
2022	**CNRS Bronze Medal**[1], early career award for French researchers (institute INS2I: award for the fields of computer science, control, signal and image processing, robotics and chip systems design).
2022	**Best Paper Award**, Eurohaptics 2022, Hamburg, Germany.
2022	RAS Most Active Technical Committee Award for the IEEE RAS Technical Committee on Haptics, during my tenure as Chair (Co-Chairs: Manuel Cruz, Ki-Uk Kyung).
2021	**Best Paper Award**, Joint International Conference on Artificial Reality and Telexistence (ICAT) and Eurographics Symposium on Virtual Environments (EGVE), held online.
2021	**Best Demonstration Award**, IEEE World Haptics Conference (WHC), held online.
2020	**Best Demonstration Award**, Eurohaptics, Leiden, The Netherlands.
2020	Best IEEE Trans. Haptics Short Paper - First Honorable Mention, IEEE Haptics Symposium (HAPTICS), Washington DC, USA (held online due to COVID-19).
2020	Best IEEE Trans. Haptics Short Paper - Second Honorable Mention, IEEE Haptics Symposium (HAPTICS), Washington DC, USA (held online due to COVID-19).
2020	Best Video Presentation – Honorable Mention, IEEE Haptics Symposium (HAPTICS), Washington DC, USA (held online due to COVID-19).
2020	Best Presentation Award, IEEE International Conference on Information and Computer Technologies (ICICT), San Jose, USA.
2018	Top 1% Reviewer by field, 2018 Peer Review Awards, Publons.
2016	Silver Award (2nd best paper), AsiaHaptics, Chiba, Japan.
2016	**Best Demonstration Award**, IEEE Haptics Symposium (HAPTICS), Philadelphia, USA.
2015	Meritorious Service Award as a Reviewer, IEEE Transactions on Haptics.
2015	**Eurohaptics Best PhD Thesis Award** (best doctoral thesis in the field of haptics). Award granted by the Eurohaptics Society during the 2015 IEEE World Haptics Conference, Chicago, USA.
2014	Most Involved Resident Award, International House of Philadelphia, Philadelphia, PA, USA.
2010	RemoTouch system (B.S. thesis project) selected to represent Italian scientific innovations during the World Expo 2010 in Shanghai, China.

Funded Research Projects and Grants

I have secured funding for a total of ∼**3,879,524 EUR** from 2015.

2025 – 2029	**ANR AAPG 2024 PRC (322,524 EUR)** for project "MATES: Multi-drone-human collaboration teams for high-risk assembling and handling tasks" (**coordinator**, collaborative French project).
2023 – 2024	Région Bretagne – Stratégie d'attractivité durable (volet 2) (57,000 EUR) for project "ACT5G" (coordinator, individual project).
2022 – 2026	**Horizon Europe – HORIZON-CL4-2021-DIGITAL-EMERGING (1,120,908 EUR)** for project "RĔGO: Cognitive robotic tools for human-centered small-scale multi-robot operations" (**coordinator**, collaborative EU project).
2022 – 2024	Labex CominLabs (80,000 EUR) for project "EM-ART – Electromagnetic artificial human: paradigm shift in dosimetry for 5G and beyond" (co-coordinator, collaborative French project).
2021 – 2022	H2020 FET Innovation Launchpad (27,250 EUR) for project "E-TEXTURES – AI-Enabled Mid-Air Haptic Texture Generation" (co-PI of the CNRS unit, collaborative EU project).
2021 – 2023	Associated Team "FRANTIC" – French-Russian Advanced and Novel TactIle Cyberworlds / Cybermondes tactiles Franco-Russes (22,500 EUR) (coordinator/head of the associated team, with the Skoltech Space Center). The project is suspended as a consequence of the Russo-Ukrainian War.

[1] CNRS Bronze, Silver, and Gold Medals are awarded according to the stage of one's carrier: early-stage (Bronze), medium-stage (Silver) and advanced-stage (Gold). More information is available here.

2021 – 2025	Inria Challenge (∼1,500,000 EUR) for project "DORNELL – A multimodal, shapeable haptic handle for mobility assistance of people with disabilities" (co-coordinator, collaborative French project).
2021 – 2022	CNRS International Emerging Actions (13,500 EUR) for project "Study on the distributed control of heterogeneous human-robot teams with tactile feedback for collaborative exploration and patrolling" (coordinator, collaborative French-Russian project with the Skoltech Space Center). The project is suspended as a consequence of the Russo-Ukrainian War.
2019 – 2020	Région Bretagne – Stratégie d'attractivité durable (volet 2) (76,000 EUR) for project "WH-DRONE" (coordinator, individual project).
2018 – 2022	**H2020 FET-Open – Novel ideas for radically new technologies** (598,420 EUR) for project "H-Reality – Mixed Haptic Feedback for Mid-Air Interactions in Virtual and Augmented Realities" (PI of the CNRS unit, collaborative EU project).
2018	CNRS – PEPS JCJC (7,000 EUR) for project "ShareHaptics" (coordinator, individual project).
2017	Rennes Métropole - Allocation d'Installation Scientifique (AIS) (40,000 EUR) for project "Haptic-Enabled Control of Multiple UAVs for Telemanipulation" (coordinator, individual project).
2015	Intuitive Surgical Technology Research Grant (14,400 USD) for project "Comparison of cutaneous feedback methods for pinching palpation in robotic surgery" (co-PI of the UNISI unit, collaborative project with UPenn).

In addition to the above projects, for which I have a leading role either as (co-)coordinator of the project or PI of the unit, I have also been participating on the following collaborative projects:

"GuestXR – A Machine Learning Agent for Social Harmony in eXtended Reality" (Horizon 2020)

"TACTILITY - TACTIle feedback enriched virtual interaction through virtual realITY and beyond" (Horizon 2020)

"PRESENT - Photoreal REaltime Sentient ENTity" (Horizon 2020)

"RoMaNS - Robotic Manipulation for Nuclear Sort and Segregation" (Horizon 2020)

"WEARHAP - WEARable HAPtics for humans and robots" (FP7)

"ACTIVE - Active Constraints Technologies for Ill-defined or Volatile Environments" (FP7)

"THE - THE Hand Embodied" (FP7)

"ROBOCAST - ROBOt and sensors integration for Computer Assisted Surgery and Therapy" (FP7)

"Underactuated systems for manipulation in virtual environment" (Italian PRIN programme)

"Establishing IEEE/RAS Points of Presence and Initiatives in Second Life (SL)" (IEEE RAS "New Initiatives")

Publications

Books

B1. **C. Pacchierotti.** "Cutaneous haptic feedback in robotic teleoperation." *Springer Series on Touch and Haptic Systems*, Springer International Publishing, 2015. DOI

B2. O. Georgiou, W. Frier, E. Freeman, **C. Pacchierotti**, T. Hoshi (eds.). "Ultrasound Mid-Air Haptics for Touchless Interfaces", *Human-Computer Interaction Series*, Springer, 2022. DOI

International Journal Articles

J1. J. J. Fleck, Z. A. Zook, J. P. Clark, D. J. Preston, D. J. Lipomi, **C. Pacchierotti**, M. K. O'Malley. "Wearable multi-sensory haptic devices." Conditionally accepted to Nature Reviews Bionengineering, 2024.

J2. M. Ferro, F. N. Piñan Basualdo, P. Robuffo Giordano, S. Misra, **C. Pacchierotti**. "Experimental evaluation of haptic shared control for multiple electromagnetic untethered microrobots." IEEE Transactions on Automation Science and Engineering, 2024. PDF

J3. A. Marino, **C. Pacchierotti**, P. Robuffo Giordano. "Multi-UAVs end-to-end distributed trajectory generation over point cloud data." IEEE Robotics and Automation Letters, 9(9):7629–7636, 2024. PDF DOI

J4. L. Mulot, T. Howard, G. Gicquel, **C. Pacchierotti**, M. Marchal. "Bimanual Ultrasound Mid-Air Haptics for Virtual Reality Manipulation." IEEE Transactions on Visualization and Computer Graphics, 2024. PDF DOI

J5. L. Kuang, M. Malvezzi, M. Ferro, D. Prattichizzo, P. Robuffo Giordano, F. Chinello, **C. Pacchierotti**. "A 4-DoF wearable hand device for haptic rendering of surfaces and edges." *Mechatronics,* 99:103173, 2024. PDF DOI

J6. **C. Pacchierotti**, D. Prattichizzo. "Cutaneous/tactile haptic feedback in robotic teleoperation: motivation, survey, and perspectives." *IEEE Transactions on Robotics,* 40:978–998, 2024. PDF DOI

J7. E. Normand, **C. Pacchierotti**, E. Marchand, M. Marchal. "Visuo-haptic rendering of the hand during 3D manipulation in Augmented Reality." *IEEE Transactions on Haptics, Special Issue on Haptics in the metaverse: Haptic feedback for Virtual, Augmented, Mixed, and eXtended Realities,* 17(2):277–291, 2024. PDF DOI

J8. U. Radhakrishnan, L. Kuang, K. Koumaditis, F. Chinello, **C. Pacchierotti**. "Haptic feedback, performance and arousal: a comparison study in an immersive VR motor skill training task." *IEEE Transactions on Haptics, Special Issue on Haptics in the metaverse: Haptic feedback for Virtual, Augmented, Mixed, and eXtended Realities,* 17(2):249–262, 2024. PDF DOI

J9. P.-A. Cabaret, T. Howard, G. Gicquel, **C. Pacchierotti**, M. Babel, M. Marchal. "Does multi-actuator vibrotactile feedback within tangible objects enrich VR manipulation?" *IEEE Transactions on Visualization and Computer Graphics*, 30(8):4767–4779, 2023. PDF DOI

J10. L. Kuang, M. Ferro, M. Malvezzi, D. Prattichizzo, P. Robuffo Giordano, F. Chinello, **C. Pacchierotti**. "A Wearable Haptic Device for the Hand with Interchangeable End-Effectors." *IEEE Transactions on Haptics, Special Issue on Haptics in the metaverse: Haptic feedback for Virtual, Augmented, Mixed, and eXtended Realities,* 17(2):129–139, 2024. PDF DOI

J11. L. Mulot, T. Howard, **C. Pacchierotti**, M. Marchal. "Improving the perception of mid-air tactile shapes With spatio-temporally-modulated tactile pointers." *ACM Transactions on Applied Perception (also presented at the SAP conference in Los Angeles, USA)*, 20(4):13, 2023. PDF DOI

J12. R. Fernandez-Fernandez, B. Lukawski, J. G. Victores, **C. Pacchierotti**. "Transferring Human Emotions to Robot Motions using Neural Policy Style Transfer." *Cognitive Systems Research*, 82:101121, 2023. PDF DOI

J13. M. Ferro, **C. Pacchierotti**, S. Rossi, M. Vendittelli. "Deconstructing haptic feedback information in robot-assisted needle insertion in soft tissues." *IEEE Transactions on Haptics*, 16(4):536-542, 2023. PDF DOI

J14. T. Howard, G. Gicquel, **C. Pacchierotti**, M. Marchal. "Can we effectively combine tangibles and ultrasound mid-air haptics? A study of acoustically transparent tangible surfaces." *IEEE Transactions on Haptics*, 16.4: 477–483, 2023. PDF DOI

J15. I.Lacôte, **C. Pacchierotti**, M. Babel, D. Gueorguiev, M. Marchal. "Investigating the Haptic Perception of Directional Information Within a Handle." *IEEE Transactions on Haptics*, In press, 2023. PDF DOI

J16. L. Mulot, T. Howard, **C. Pacchierotti**, M. Marchal. "Ultrasound Mid-Air Haptics for Hand Guidance in Virtual Reality." *IEEE Transactions on Haptics*, 16(4):497–503, 2024. PDF DOI

J17. E. Bouzbib, M. Teyssier, T. Howard, **C. Pacchierotti**, A. Lécuyer. "PalmEx: Adding Palmar Force-Feedback for 3D Manipulation with Haptic Exoskeleton Gloves." *IEEE Transactions on Visualization and Computer Graphics*, 2023. PDF DOI

J18. E. Bouzbib, **C. Pacchierotti**, A. Lécuyer. "When Tangibles Become Deformable: Studying Pseudo-Stiffness Perceptual Thresholds in a VR Grasping Task." *IEEE Transactions on Visualization and Computer Graphics*, 29(5):2743–2752, 2023. PDF DOI

J19. R. Rahal, A. M. Ghalamzan, F. Abi-Farraj, **C. Pacchierotti**, P. Robuffo Giordano. "Haptic-guided grasping to minimise torque effort during robotic telemanipulation." *Autonomous Robots*, 47:405–423, 2023. PDF DOI

J20. A. Jovane, P. Raimbaud, K. Zibrek, **C. Pacchierotti**, M. Christie, L. Hoyet, A-H. Olivier, J. Pettré. "Warping Character Animations using Visual Motion Features." *Computers & Graphics*, 110:38–48, 2023. PDF DOI

J21. S. Vizcay, P. Kourtesis, F. Argelaguet, **C. Pacchierotti**, M. Marchal. "Design, evaluation and calibration of wearable electrotactile interfaces for enhancing contact information in Virtual Reality." *Computers & Graphics*, 111:199–212, 2023. PDF DOI

J22. P. Kourtesis, S. Vizcay, M. Marchal, **C. Pacchierotti**, F. Argelaguet. "Action-specific perception & performance on a Fitts's Law task in Virtual Reality: The role of haptic feedback." *IEEE Transactions on Visualization and Computer Graphics*, 28(11):3715–3726, 2022. PDF DOI

J23. T. Howard, K. K. Driller, W. Frier, **C. Pacchierotti**, M. Marchal, J. Hartcher-O'Brien. "Gap detection in pairs of ultrasound mid-air vibrotactile stimuli." *ACM Transactions on Applied Perception*, 20(1):5, 2022. PDF DOI

J24. P. Kourtesis, F. Argelaguet, S. Vizcay, M. Marchal, **C. Pacchierotti**. "Electrotactile feedback applications for hand and arm interactions: A systematic review, meta-analysis, and future directions." *IEEE Transactions on Haptics*, 15(3):479–496, 2022. PDF DOI

J25. G. Barresi, **C. Pacchierotti**, M. Laffranchi, L. De Michieli. "Beyond Digital Twins: Phygital Twins for Neuroergonomics in Human-Robot Interaction." *Frontiers in Neurorobotics*, 16:913605, 2022. PDF DOI

J26. G. Notomista, **C. Pacchierotti**, P. Robuffo Giordano. "Online robot trajectory optimization for persistent environmental monitoring." *IEEE Control Systems Letters*, 6:1472–1477, 2021. PDF DOI

J27. M. Aggravi, G. Sirignano, P. Robuffo Giordano, **C. Pacchierotti**. "Decentralized control of a heterogeneous human-robot team for exploration and patrolling." *IEEE Transactions on Automation Science and Engineering*, 19(14): 3109–3125, 2021. PDF DOI

J28. M. Selvaggio, J. Cacace, **C. Pacchierotti**, F. Ruggiero, P. Robuffo Giordano. "A shared-control teleoperation architecture for nonprehensile object transportation." *IEEE Transactions on Robotics*, 2021. This paper was featured on "Video Friday" by IEEE Spectrum. PDF DOI

J29. M. Malvezzi, F. Chinello, D. Prattichizzo, **C. Pacchierotti**. "Design of personalized wearable haptic interfaces to account for fingertip size and shape." *IEEE Transactions on Haptics*, 2021. PDF DOI

J30. M. Aggravi, D. Estima, A. Krupa, S. Misra, **C. Pacchierotti**. "Haptic teleoperation of flexible needles combining 3D ultrasound guidance and needle tip force feedback." *IEEE Robotics and Automation Letters*, 6(3): 4859–4866, 2021. PDF DOI

J31. Y. Michel, R. Rahal, **C. Pacchierotti**, P. Robuffo Giordano, Dongheui Lee. "Bilateral teleoperation with adaptive impedance control for contact tasks." *IEEE Robotics and Automation Letters*, 6(3): 5429–5436, 2021. PDF DOI

J32. M. Aggravi, A. A. S. Elsherif, P. Robuffo Giordano, **C. Pacchierotti**. "Haptic-enabled decentralized control of a heterogeneous human-robot team for search and rescue in partially-known environments." *IEEE Robotics and Automation Letters*, 6(3): 4843– 4850, 2021. PDF DOI

J33. M. Aggravi, **C. Pacchierotti**, P. Robuffo Giordano. "Connectivity-maintenance teleoperation of a UAV fleet with wearable haptic feedback." *IEEE Transactions on Automation Science and Engineering*, 18(3):1243–1262, 2021. PDF DOI

J34. X. de Tinguy, **C. Pacchierotti**, A. Lécuyer, M. Marchal. "Capacitive sensing for improving contact rendering with tangible objects in VR." *IEEE Transactions on Visualization and Computer Graphics*, 27(4): 2481–2487, 2020. PDF DOI

J35. A. Lillienskiold, R. Rahal, P. Robuffo Giordano, **C. Pacchierotti**, E. Misimi. "Human-inspired haptic-enabled learning from prehensile move demonstrations." *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, In Press, 2020. PDF DOI

J36. F. Berton, F. Grzeskowiak, A. Bonneau, A. Jovane, M. Aggravi, L. Hoyet, A. Olivier, **C. Pacchierotti**, J. Pettré. "Crowd navigation in VR: exploring haptic rendering of collisions." *IEEE Transactions on Visualization and Computer Graphics*, In Press, 2020. PDF DOI

J37. M. Cognetti, M. Aggravi, **C. Pacchierotti**, P. Salaris, P. Robuffo Giordano. "Perception-aware human-assisted navigation of mobile robots on persistent trajectories." *IEEE Robotics and Automation Letters*, 5(3): 4711–4718, 2020. PDF DOI

J38. R. Rahal, G. Matarese, M. Gabiccini, A. Artoni, D. Prattichizzo, P. Robuffo Giordano, **C. Pacchierotti**. "Caring about the human operator: haptic shared control for enhanced user comfort in robotic telemanipulation" *IEEE Transactions on Haptics*, 13(1):197–203, 2020. This paper has won the IEEE Trans. Haptics Best Paper Award (First Honorable Mention, 2020 IEEE HAPTICS track). PDF DOI

J39. D. S. Villa Salazar, **C. Pacchierotti**, X. De Tinguy De La Girouliere, A. Maciel, M. Marchal. "Altering the stiffness, friction, and shape perception of tangible objects in Virtual Reality using wearable haptics" *IEEE Transactions on Haptics*, 13(1):167–174, 2020. This paper has won the IEEE Trans. Haptics Best Paper Award (Second Honorable Mention, 2020 IEEE HAPTICS track). PDF DOI

J40. T. Howard, M. Marchal, A. Lécuyer, **C. Pacchierotti**. "PUMAH : Pan-tilt ultrasound mid-Air haptics for larger interaction workspace in virtual reality" *IEEE Transactions on Haptics*, 13(1):38–44, 2020. This paper has been selected as a finalist for the IEEE Trans. Haptics Best Paper Award (2020 IEEE HAPTICS track), and it has won the Best Video Presentation award (Honorable Mention). PDF DOI

J41. L. Devigne, M. Aggravi, M. Bivaud, N. Balix, C. Stefan Teodorescu, T. Carlson, T. Spreters, **C. Pacchierotti**, M. Babel. "Power wheelchair navigation assistance using wearable vibrotactile haptics" *IEEE Transactions on Haptics*, 13(1):52–58, 2020. PDF DOI

J42. E. Young, D. Gueorguiev, K. J. Kuchenbecker*, **C. Pacchierotti***. "Compensating for fingertip size to render tactile cues more accurately" *IEEE Transactions on Haptics*, 13(1):144–151, 2020. *K. J. Kuchenbecker and C. Pacchierotti contributed equally to this work. PDF DOI

J43. F. Abi-Farraj, **C. Pacchierotti**, O. Arenz, G. Neumann, P. Robuffo Giordano. "A haptic shared-control architecture for guided multi-target robotic grasping." *IEEE Transactions on Haptics*, 13(2):270–285, 2020. PDF DOI

J44. F. Chinello, M. Malvezzi, D. Prattichizzo, **C. Pacchierotti**. "A modular wearable finger interface for cutaneous and kinesthetic interaction: control and evaluation". *IEEE Transactions on Industrial Electronics, Special Issue on Novel Emerging Sensing, Actuation and Control Techniques for Haptic Interaction and Teleoperation*, 67(1):706–716, 2019. PDF DOI

J45. L. Meli, **C. Pacchierotti**, G. Salvietti, F. Chinello, M. Maisto, A. De Luca, D. Prattichizzo. "Combining wearable haptics and Augmented Reality: User evaluation using an external camera and the Microsoft HoloLens". *IEEE Robotics & Automation Letters (also presented at IROS)*, 3(4):4297–4304, 2018. PDF DOI

J46. M. Selvaggio, F. Abi-Farraj, **C. Pacchierotti**, P. Robuffo Giordano, B. Siciliano. "Haptic-based shared-control methods for a dual-arm system." *IEEE Robotics & Automation Letters (also presented at IROS)*, 3(4):4249–4256, 2018. PDF DOI

J47. **C. Pacchierotti**, E. M. Young, K. J. Kuchenbecker. "Task-driven PCA-based design optimization of wearable cutaneous devices." *IEEE Robotics & Automation Letters (also presented at ICRA)*, 3(3):2214–2221, 2018. PDF DOI

J48. M. Aggravi, F. Pausé, P. Robuffo Giordano, **C. Pacchierotti**. "Design and evaluation of a wearable haptic device for skin stretch, pressure, and vibrotactile stimuli." *IEEE Robotics & Automation Letters (also presented at ICRA)*, 3(3):2166–2173, 2018. PDF DOI

J49. F. Chinello, **C. Pacchierotti**, J. Bimbo, N. G. Tsagarakis, D. Prattichizzo. "Design and evaluation of a wearable skin stretch device for haptic guidance." *IEEE Robotics & Automation Letters, Special Issue on Human Cooperative Wearable Robotic Systems*, 3(1):524–531, 2018. PDF DOI

J50. F. Chinello, **C. Pacchierotti**, M. Malvezzi, D. Prattichizzo. "A three Revolute-Revolute-Spherical wearable fingertip cutaneous device for stiffness rendering." *IEEE Transactions on Haptics*, 11(1):39–50, 2018. PDF DOI

J51. F. Sanfilippo, **C. Pacchierotti**. "A wearable haptic system for the health monitoring of elderly people in smart cities." *International Journal of Online Engineering*, 14(8):52–66, 2018. PDF DOI

J52. **C. Pacchierotti**, F. Ongaro, F. van den Brink, C. Yoon, D. Prattichizzo, D. H. Gracias, S. Misra. "Steering and control of miniaturized untethered soft magnetic grippers with haptic feedback." *IEEE Transactions on Automation Science and Engineering*, 15(1):290–306, 2018. PDF DOI

J53. **C. Pacchierotti**, S. Sinclair, M. Solazzi, A. Frisoli, V. Hayward, D. Prattichizzo. "Wearable haptic systems for the fingertip and the hand: taxonomy, review, and perspectives." *IEEE Transactions on Haptics*, 10(4):580–600, 2017. This article has been ranked as the most popular ToH paper on IEEEXplore since its publication. PDF DOI

J54. M. Maisto, **C. Pacchierotti**, F. Chinello, G. Salvietti, A. De Luca, D. Prattichizzo. "Evaluation of wearable haptic systems for the fingers in Augmented Reality applications." *IEEE Transactions on Haptics*, 10(4):511–522, 2017. This article has been featured on Science Magazine. PDF DOI

J55. L. Meli, **C. Pacchierotti**, D. Prattichizzo. "Experimental evaluation of magnified haptic feedback in robot-assisted needle insertion and palpation." *The International Journal of Medical Robotics and Computer Assisted Surgery*, 13(4):e1809, 2017. PDF DOI

J56. **C. Pacchierotti**, S. Scheggi, D. Prattichizzo, S. Misra. "Haptic feedback for microrobotics applications: a review". *Frontiers in Robotics and AI*, 3(53), 2016. PDF DOI

J57. M. Abayazid, **C. Pacchierotti**, P. Moreira, P. Alterovitz, D. Prattichizzo, S. Misra. "Experimental evaluation of co-manipulated ultrasound-guided flexible needle steering." *The International Journal of Medical Robotics and Computer Assisted Surgery*, 12(2):219–230, 2016. PDF DOI

J58. **C. Pacchierotti**, D. Prattichizzo, K. J. Kuchenbecker. "Cutaneous feedback of fingertip deformation and vibration for robotic surgery." *IEEE Transactions on Biomedical Engineering*, 63(2):278–287, 2016. This article has been mentioned on VentureBeat. PDF DOI

J59. **C. Pacchierotti**, L. Meli, F. Chinello, M. Malvezzi, D. Prattichizzo. "Cutaneous haptic feedback to ensure the stability of robotic teleoperation systems." *International Journal of Robotics Research*, 34(14):1773–1787, 2015. PDF DOI

J60. **C. Pacchierotti**, V. Magdanz, M. Medina-Sánchez, O. G. Schmidt, D. Prattichizzo, S. Misra. "Intuitive control of self-propelled microjets with haptic feedback." *Journal of Micro-Bio Robotics*, 10(1):37–53, 2015. PDF DOI

J61. **C. Pacchierotti**, K. J. Kuchenbecker, D. Prattichizzo. "Displaying sensed tactile cues with a fingertip haptic device." *IEEE Transactions on Haptics*, 8(4):384–396, 2015. This article has been featured in an issue of IEEE Computing Now, in a section devoted to the "Best of Cutting-Edge Computing Research". PDF DOI

J62. **C. Pacchierotti**, A. Tirmizi, G. Bianchini, D. Prattichizzo. "Enhancing the performance of passive teleoperation systems via cutaneous feedback." *IEEE Transactions on Haptics*, 8(4):397–409, 2015. This article has been featured on the homepage of the IEEE Transactions on Haptics in Jan - Feb 2016. PDF DOI

J63. **C. Pacchierotti**, M. Abayazid, S. Misra, D. Prattichizzo. "Teleoperation of steerable flexible needles by combining kinesthetic and vibratory feedback." *IEEE Transactions on Haptics*, 7(4):551–556, 2014. PDF DOI

J64. L. Meli, **C. Pacchierotti**, D. Prattichizzo. "Sensory subtraction in robot-assisted surgery: fingertip skin deformation feedback to ensure safety and improve transparency in bimanual haptic interaction." *IEEE Transactions on Biomedical Engineering*, 61(4):1318–1327, 2014. PDF DOI

J65. G. Rosati, F. Oscari, **C. Pacchierotti**, D. Prattichizzo. "Effects of kinesthetic and cutaneous stimulation during the learning of a viscous force field." *IEEE Transactions on Haptics, Special Issue on Haptics in Rehabilitation and Neural Engineering*, 7(2):251–263, 2014. PDF DOI

J66. **C. Pacchierotti**, A. Tirmizi, D. Prattichizzo."Improving transparency in teleoperation by means of cutaneous tactile force feedback." *ACM Transactions on Applied Perception*, 11(1):4–4, 2014. PDF DOI

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C2. V. Philippe, J. Hecquard, E. Hummel, F. Argelaguet, M. Macé, V. Gouranton, **C. Pacchierotti**, A. Lécuyer, J. Saint-Aubert. "Cool me down: effects of thermal feedback on cognitive stress in Virtual Reality." In *Eurohaptics 2024*, Lecture Notes in Computer Science, Springer Nature, 2024.

C3. P.-A. Cabaret, **C. Pacchierotti**, M. Babel, M. Marchal. "Design of haptic rendering techniques for navigating with a multi-actuator vibrotactile handle." In *Eurohaptics 2024*, Lecture Notes in Computer Science, Springer Nature, 2024.

C4. D. Troisi, J. Hecquard, F. Argelaguet, J. Saint-Aubert, M. Macé, A. Lécuyer, **C. Pacchierotti**, M. Malvezzi. "Studying the influence of contact force on thermal perception at the fingertip." In *Eurohaptics 2024*, Lecture Notes in Computer Science, Springer Nature, 2024.

C5. L. Kuang, M. Malvezzi, D. Prattichizzo, P. Robuffo Giordano, F. Chinello, **C. Pacchierotti**. "The HapticSpider: a 7-DoF wearable device for cutaneous interaction with the palm." In *Eurohaptics 2024*, Lecture Notes in Computer Science, Springer Nature, 2024.

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C10. A. Marino, **C. Pacchierotti**, P. Robuffo Giordano. "Liquid-graph time-constant network for multi-agent systems control" *Proc. 63rd IEEE Conference on Decision and Control (CDC)*, Milano, Italy, 2024. PDF

C11. E. Turco, C. Castellani, V. Bo, **C. Pacchierotti,** D. Prattichizzo, T. Lisini Baldi. "Reducing Cognitive Load in Teleoperating Swarms of Robots through a Data-Driven Shared Control Approach" *Proc. IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)*, Abu-Dhabi, UAE, 2024.

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C53. F. Ongaro, **C. Pacchierotti**, C. Yoon, D. Prattichizzo, D. H. Gracias, S. Misra. "Evaluation of electromagnetic system with haptic feedback for control of untethered, soft grippers affected by disturbances". *Proc. IEEE RAS EMBS Int. Conf. on Biomedical Robotics and Biomechatronics (BioRob)*, pages 908–913, Singapore, Republic of Singapore, 2016. PDF DOI

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C63. I. Hussain, L. Meli, **C. Pacchierotti**, G. Salvietti, D. Prattichizzo. "Vibrotactile haptic feedback for intuitive control of robotic extra fingers." *Proc. IEEE World Haptics Conference (WHC)*, pages 394–399, Chicago, USA, 2015. The device presented in this paper has been featured in the cover of the conference proceedings. PDF DOI

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C74. **C. Pacchierotti**, G. Rosati, D. Petroni, D. Prattichizzo."Sensory subtraction and active constraints for teleoperation." *Proc. Automatica.it* (National Italian conference), Pisa, Italy, 2011.

C75. D. Prattichizzo, **C. Pacchierotti**, S. Cenci, K. Minamizawa, G. Rosati."Using a fingertip tactile device to substitute kinesthetic feedback in haptic interaction." In *Haptics: Generating and Perceiving Tangible Sensations*, A.M.L. Kappers, J.B.F. van Erp, W.M. Bergmann Tiest, F.C.T. van der Helm (eds.), Vol. 6191, pp. 125-130, Lecture Notes in Computer Science, 2010. PDF DOI

C76. D. Prattichizzo, F. Chinello, **C. Pacchierotti**, K. Minamizawa."RemoTouch: a system for remote touch experience." *Proc. IEEE Int. Symp. in Robot and Human Interactive Communication (ROMAN)*, pages 676-679, Viareggio, Italy, 2010. This work has been presented to the EXPO 2011 in Shanghai within the "Italia degli Innovatori" initiative. PDF DOI

Short Peer-Reviewed Conference Papers, Extended Abstracts, Editorials, and Demonstrations

S1. J. Hecquard, J. Saint-Aubert, F. Argelaguet, **C. Pacchierotti**, A. Lécuyer, M. Macé. "Physiologically based affective haptic feedback in Virtual Reality." *Hands-on demonstration at the IEEE World Haptics Conference (WHC)*, Delft, The Netherlands, 2023.

S2. P.-A. Cabaret, **C. Pacchierotti**, M. Babel, M. Marchal. "Soft Material for Multi-Actuator Isolation in a Haptic Handle ." *Short paper and hands-on demonstration at the IEEE World Haptics Conference (WHC)*, Delft, The Netherlands, 2023.

S3. P. Gomez Hernandez, L. Kuang, M. Malvezzi, D. Prattichizzo, P. Robuffo Giordano, **C. Pacchierotti**, F. Chinello. "Encounter-Type Haptic Device Enabling Edges, Vertexes and Plane Palm Interaction: the Haptic Origami Device." *Short paper at the IEEE World Haptics Conference (WHC)*, Delft, The Netherlands, 2023. PDF

S4. F. Zhou, D. James Price, A. Kucukyilmaz, **C. Pacchierotti**. "Somabotics toolkit for Rapid Prototyping Human-Robot Interaction Experiences using Wearable Haptics." *Short paper at the IEEE World Haptics Conference (WHC)*, Delft, The Netherlands, 2023. PDF

S5. L. Mulot, T. Howard, **C. Pacchierotti**, M. Marchal. " Can We Increase the Perceived Intensity of Mid-Air Haptic Shapes Rendered With Dynamic Tactile Pointers?" *Short paper at the IEEE World Haptics Conference (WHC)*, Delft, The Netherlands, 2023. PDF

S6. F. Chinello, **C. Pacchierotti**, C. Fang, H. Seifi. "Tutorial in Frontiers in Haptic Technology and Interaction Design: the Challenges, the Technology, the Perspectives". *Adjunct Proceedings of the 2022 Nordic Human-Computer Interaction Conference (NordCHI)*, 2022. DOI PDF

S7. M. Babel, **C. Pacchierotti**. "DORNELL: A Multimodal, Shapeable Haptic Handle for Mobility Assistance of People with Disabilities." *ERCIM (European Research Consortium for Informatics and Mathematics) News*, Vol. 128, 2022. DOI

S8. L. Kuang, M. Marchal, P. Robuffo Giordano, **C. Pacchierotti**. "Rolling handle for hand motion guidance and teleoperation." *Short paper at Eurohaptics*, Hamburg, Germany, 2022. PDF

S9. L. Kuang, M. Marchal, P. Robuffo Giordano, **C. Pacchierotti**. "One handle to guide them all: a rolling handle for mobility aids and human-in-the-loop control." *Hands-on demonstration at Eurohaptics*, Hamburg, Germany, 2022.

S10. I. Lacôte, D. Gueorguiev, **C. Pacchierotti**, M. Babel, M. Marchal. "Feel the motion under your hand: the apparent haptic motion for assistive navigation." *Hands-on demonstration at Eurohaptics*, Hamburg, Germany, 2022.

S11. S. Vizcay, P. Kourtesis, F. Argelaguet, **C. Pacchierotti**, M. Marchal. "Electrotactile patterns for single finger interactions in VR." *Short paper at Eurohaptics*, Hamburg, Germany, 2022. PDF

S12. T. Howard, X. de Tinguy, G. Gicquel, M. Marchal, A. Lécuyer, **C. Pacchierotti**. "WeATaViX: Wearable Actuated Tangibles for Virtual Reality Experiences." *Hands-on demonstration at Eurohaptics*, Hamburg, Germany, 2022.

S13. T. Howard, X. de Tinguy, G. Gicquel, M. Marchal, A. Lécuyer, **C. Pacchierotti**. "WeATaViX: Wearable Actuated Tangibles for Virtual Reality Experiences." *Hands-on demonstration at the IEEE World Haptics Conference (WHC)*, 2021. This demo has won the Best Demonstration Award. PDF

S14. T. Howard, G. Gicquel, M. Marchal, A. Lécuyer, **C. Pacchierotti**. "PUMAH : Pan-tilt Ultrasound Mid-Air Haptics." *Hands-on demonstration at the IEEE World Haptics Conference (WHC)*, 2021. PDF

S15. I. Lacôte, **C. Pacchierotti**, M. Babel, M. Marchal, D. Gueorguiev. "Generating apparent haptic motion for assistive devices." *Short paper at the IEEE World Haptics Conference (WHC)*, 2021. PDF

S16. L. Mulot, G. Gicquel, W. Frier, M. Marchal, **C. Pacchierotti**, T. Howard. "Curvature discrimination for dynamic ultrasound mid-air haptic stimuli." *Short paper at the IEEE World Haptics Conference (WHC)*, 2021. PDF

S17. R. Rahal, G. Matarese, M. Gabiccini, A. Artoni, D. Prattichizzo, P. Robuffo Giordano, **C. Pacchierotti**. "Haptic shared control for enhanced user comfort in robotic telemanipulation" *IEEE ICRA Workshop on "Shared Autonomy: Learning and Control"*, 2020. PDF

S18. M. Cognetti, M. Aggravi, **C. Pacchierotti**, P. Salaris, P. Robuffo Giordano. "Shared control active perception for human-assisted navigation." *2nd Italian Conference on Robotics and Intelligent Machines (I-RIM)*, 2020. PDF

S19. A. Colas, W. van Toll, L. Hoyet, C. Pacchierotti, M. Christie, K. Zibrek, A. Olivier, J. Pettré. "Interaction fields: sketching collective behaviours." *Poster at ACM Motion, Interaction and Games (MIG)*, Online, 2020. PDF

S20. F. Chinello, M. Olsen, **C. Pacchierotti**. "Haptic rendering with wearable interfaces using machine learning." *Short paper at Eurohaptics*, Leiden, The Netherlands, 2020.

S21. X. de Tinguy , T. Howard, **C. Pacchierotti**, M. Marchal, A. Lécuyer. "WeATaViX: WEarable Actuated TAngibles for VIrtual reality eXperiences." *Hands-on demonstration at Eurohaptics*, Leiden, The Netherlands, 2020. This demo has won the Best Demonstration Award.

S22. T. Howard, G. Gicquel, M. Marchal, A. Lécuyer, **C. Pacchierotti**. "PUMAH : Pan-tilt Ultrasound Mid-Air Haptics" *Hands-on demonstration at Eurohaptics*, Leiden, The Netherlands, 2020.

S23. T. Howard, M. Marchal, A. Lécuyer, **C. Pacchierotti**. "PUMAH : Pan-tilt Ultrasound Mid-Air Haptics" *Hands-on demonstration at the IEEE Haptics Symposium (HAPTICS)*, Washington, USA, 2020. Due to COVID-19, the conference has only been held online and hands-on demonstrations have not been presented. PDF

S24. M. Aggravi, T. Lisini Baldi, **C. Pacchierotti**, D. Prattichizzo. "Combined tracking and vibrotactile rendering with a wearable armband" *Hands-on demonstration at the IEEE Haptics Symposium (HAPTICS)*, Washington, USA, 2020. Due to COVID-19, the conference has only been held online and hands-on demonstrations have not been presented. PDF

S25. D. Prattichizzo, M. Otaduy, H. Kajimoto, **C. Pacchierotti**. "Wearable and hand-held haptics." *IEEE Transactions on Haptics, Editorial for the Special Issue,* 12(3):227-231, 2019. PDF

S26. D. Gueorguiev, D. Tzionas, **C. Pacchierotti**, M. J. Black, and K. J. Kuchenbecker. "Statistical modelling of fingertip deformations and contact forces during tactile interaction." *Hand, Brain and Technology: the Somatosensory System,* Monte Verità, Switzerland, 2018.

S27. D. Gueorguiev, D. Tzionas, **C. Pacchierotti**, M. J. Black, and K. J. Kuchenbecker. "Towards a statistical model of fingertip contact deformations from 4D data." *Short paper at the IEEE Haptics Symposium (HAPTICS)*, San Francisco, USA, 2018.

S28. G. Spagnoletti, L. Meli, T. Lisini Baldi, G. Gioioso, **C. Pacchierotti**, D. Prattichizzo. "Wearable haptics to render interaction forces and object textures in 3D virtual environments." *Hands-on demonstration at the IEEE Haptics Symposium (HAPTICS)*, San Francisco, USA, 2018.

S29. G. Spagnoletti, L. Meli, T. Lisini Baldi, G. Gioioso, **C. Pacchierotti**, D. Prattichizzo. "Rendering of pressure and textures using wearable haptics in immersive VR environments." *Proc. IEEE International Conference on Virtual Reality (VR)*, Reutlingen, Germany, 2018. PDF

S30. F. Abi-Farraj, **C. Pacchierotti**, P. Robuffo Giordano. "Human-subject evaluation of shared-control approaches for robotic telemanipulation." *Workshop on "Human in-the-loop manipulation: on the influence of the human role", IEEE/RSJ Int. Symp. Intelligent Robots and Systems (IROS)*, Vancouver, Canada, 2017. PDF

S31. G. Gioioso, G. Spagnoletti, L. Meli, T. Lisini Baldi, **C. Pacchierotti**, and D. Prattichizzo. "Interacting with the virtual reality: rendering of pressure, textures, and making/breaking contact sensations via fingertip wearable haptic devices." *Short paper at the IEEE World Haptics Conference (WHC)*, Münich, Germany, 2017. PDF

S32. G. Gioioso, G. Spagnoletti, L. Meli, T. Lisini Baldi, **C. Pacchierotti**, and D. Prattichizzo. "Interacting with the virtual reality: rendering of pressure, textures, and making/breaking contact sensations via fingertip wearable haptic devices." *Hands-on demonstration at the IEEE World Haptics Conference (WHC)*, Münich, Germany, 2017. PDF

S33. O. A. Moreno, J. Bimbo, **C. Pacchierotti**, G. Bianchini, and D. Prattichizzo. "Optimizing damping factors in a 3DoF passive two-layer approach for bilateral telemanipulation." *Short paper at the IEEE World Haptics Conference (WHC)*, Münich, Germany, 2017. PDF

S34. G. Spagnoletti, I. Hussain, **C. Pacchierotti**, G. Salvietti, and D. Prattichizzo. "The hRing as a wearable haptic interface for extra robotic fingers." *Hands-on demonstration at the IEEE Haptics Symposium (HAPTICS)*, Philadelphia, PA, USA, 2016. Best Demonstration Award winner. PDF

S35. **C. Pacchierotti**, V. Magdanz, M. Medina-Sánchez, O. G. Schmidt, D. Prattichizzo, S. Misra. "Teleoperation of self-propelled microjets with haptic feedback." *Short Paper at the IEEE World Haptics Conference (WHC)*, Chicago, USA, 2015. PDF

S36. L. Meli, S. Scheggi, **C. Pacchierotti**, D. Prattichizzo. "Using the Leap Motion controller for hand tracking and wearable haptic devices for contact rendering." *Hands-on demonstration at the IEEE World Haptics Conference (WHC)*, Chicago, USA, 2015. PDF

S37. **C. Pacchierotti**, D. Prattichizzo. "Sensory subtraction via cutaneous feedback: a novel technique to improve the transparency of robotic surgery." *Proc. 4th Joint Workshop on Computer/Robot Assisted Surgery (CRAS)*, Genova, Italy, 2014. PDF DOI

S38. **C. Pacchierotti**, P. Shirsat, J. K. Koehn, D. Prattichizzo, K. J. Kuchenbecker. "Cutaneous feedback of planar fingertip deformation and vibration on a da Vinci Surgical robot." *Workshop on "The Role of Human Sensorimotor Control in Surgical Robotics", IEEE/RSJ Int. Symp. Intelligent Robots and Systems (IROS)*, Chicago, USA, 2014. PDF DOI

S39. D. Prattichizzo, **C. Pacchierotti**. "WEARHAP: sistemi robotici indossabili per uomini e robot." *E-Health magazine: Ingegneria Clinica*, Issue 26, 2013. PDF

S40. D. Prattichizzo, **C. Pacchierotti**, S. Mulatto, S. Nencini, M. de Pascale, M. Fei, and E. Fei."The role of robotics in Second Life." *Workshop on "Simulation and Second Life"*, Hyperborea, Centre for Policy Modelling, Second Life, 2007. PDF DOI

Selected Invited Talks

T1. **C. Pacchierotti**. "Haptics for biomedical applications." *Seminar for the M2 course on Biomedical Engineering, University of Twente*, Enschede, The Netherlands, 2024.

T2. **C. Pacchierotti**. "Cutaneous haptics in human-centered robotics." *Seminar for the Robotics and Mechatronics (RaM) group, University of Twente*, Enschede, The Netherlands, 2024.

T3. **C. Pacchierotti**. "Cutaneous haptics in human-centered robotics and immersive interaction." *Univ. Lisbon*, Lisbon, Portugal, 2024.

T4. **C. Pacchierotti**. "RĔGO: Cognitive robotic tools for human-centered small-scale multi-robot operations." *Workshop on "Enabling artificial agents to communicate with humans through touch" at Eurohaptics*, Lille, France, 2024.

T5. **C. Pacchierotti**. "Beyond force feedback: the role of cutaneous haptics in human-centered robotics." *Keynote presentation at the IEEE International Conference on Robotics and Automation (ICRA)*, Yokohama, Japan, 2024.

T6. **C. Pacchierotti**. "The potential of haptic feedback for medical robotics: from robot-assisted surgery to micro-robotics." *Workhop on "Translational Research in Medical Robotics: From Lab Bench to Clinical Use" at IEEE ICRA*, Yokohama, Japan, 2024.

T7. **C. Pacchierotti**. "Wearable haptics for immersive experiences." *Keio University Graduate School of Media Design*, Tokyo, Japan, 2024.

T8. **C. Pacchierotti**. "Haptics for human-centered robotics and Virtual Reality." *Seminar for the Dept. Cogntive and Brain Sciences, Indian Institute of Technology Gandhinagar*, online, 2024.

T9. **C. Pacchierotti**. "Cutaneous haptic feedback for telemanipulation and Virtual Reality." *I-RIM 3D: Conferenza Italiana di Robotica e Macchine Intelligenti*, Rome, Italy, 2023.

T10. **C. Pacchierotti**. "Technologies for touching virtual content." *High school ITIS Delpozzo in Cuneo (Italy)*, online, 2023.

T11. **C. Pacchierotti**. "Interaction haptique homme-machine avec la réalité physique et virtuelle." *Conseil Scientifique de l'Institut CNRS-INS2I*, Paris, France, 2023.

T12. **C. Pacchierotti**. "Haptique: la science du toucher." *Association des journalistes scientifiques de la presse d'information (AJSPI)*, online, 2022.

T13. **C. Pacchierotti**. "Haptics: technology and perspectives." *Workshop on "Frontiers in Haptic Technology and Interaction Design: the Challenges, the Technology, the Perspectives" at NordCHI*, Aarhus, Denmark, 2022.

T14. **C. Pacchierotti**. "Haptic-enabled robotic systems for manipulating soft materials." *Workshop on "Grasping and manipulation of deformable objects" at I-RIM*, Rome, Italy, 2022.

T15. **C. Pacchierotti**. "Cutaneous haptics for the metaverse." *University of Aarhus*, Herning, Denmark, 2022.

T16. **C. Pacchierotti**. "Cutaneous haptic feedback for robotics and Virtual Reality." *University of Rome "La Sapienza"*, Rome, Italy, 2022.

T17. **C. Pacchierotti**. "Cutaneous haptic feedback for robotics and Virtual Reality." *Laboratoire d'Informatique de Grenoble – UMR 5217*, Grenoble (then held online), France, 2022.

T18. **C. Pacchierotti**. "Less is more: the challenge of wearable haptics in the era of immersive technologies." *University of Aarhus*, Herning (then held online), Denmark, 2021.

T19. **C. Pacchierotti**. "Touching virtual reality: extending immersive experiences through haptics." *MatchPoints 2021*, Aarhus (then held online), Denmark, 2021.

T20. **C. Pacchierotti**. "Wearable haptic technologies for robotics and immersive virtual environments." *University of Rome "La Sapienza"*, Rome (then held online), Italy, 2020.

T21. **C. Pacchierotti** and A. M. Okamura. "Learnings from cross-functional work on skin stretch haptics." *Workshop "Cross-functional collaboration between engineering & perception researchers" at IEEE World Haptics Conference (WHC)*, Tokyo, Japan, 2019.

T22. **C. Pacchierotti**. "Cutaneous haptic technologies for robotics and immersive environments." *Cirrus Logic*, Edinburgh, United Kingdom, 2019.

T23. **C. Pacchierotti**. "Virtual Reality and Robotics for Industry 4.0." *University of Aarhus*, Herning, Denmark, 2019.

T24. **C. Pacchierotti**. "Our wearable haptics experience: story, insights, and open questions" *Workshop "User-Centered Methods in Human-Robot Interaction" at IROS Conference*, Madrid, Spain, 2018.

T25. **C. Pacchierotti**. "Haptic feedback and robotic procedures" *10th Annual meeting on Robotic Gynaecological Surgery of the Society of European Robotic Gyneacological Surgery (SERGS)*, Milan, Italy, 2018.

T26. **C. Pacchierotti**. "Cutaneous haptic feedback in robotic medical procedures." *Presentation to Titan Medical Inc.*, Strasbourg, France, 2018.

T27. **C. Pacchierotti**. "Wearable haptics for virtual and augmented reality: applications in the entertainment and robotic fields" *Robotics Research Jam Sessions at the University of Pisa*, Pisa, Italy, 2018.

T28. **C. Pacchierotti**. "Wearable fingertip haptics for mixed reality." *University of Aarhus*, Herning, Denmark, 2018.

T29. **C. Pacchierotti**. "Haptic feedback in robotic procedures: current work and perspectives." *Congress of the Society of Endometriosis and Uterine Disorders*, Florence, Italy, 2018.

T30. **C. Pacchierotti**. "The future of haptic feedback in robotic procedures." *Beyond Gynecologic Surgery conference*, Clermont-Ferrant, France, 2018.

T31. **C. Pacchierotti**. "Wearable fingertip haptics for Virtual Reality." *Workshop on "Wearable and portable haptics for VR and AR"*, IEEE International Conference on Virtual Reality (VR), Reutlingen, Germany, 2018.

T32. **C. Pacchierotti**. "Wearable haptics for VR and AR." *Max-Planck Institute for Intelligent Systems*, Stuttgart, Germany, 2017.

T33. **C. Pacchierotti**. "Cutaneous haptic feedback to improve the performance and safety of robotic teleoperation systems." *Robotics Research Jam Sessions at the University of Pisa*, Pisa, Italy, 2016.

T34. **C. Pacchierotti**. "Cutaneous haptic feedback in robotic teleoperation." *Université de Picardie Jules Verne*, Amiens, France, 2016.

T35. **C. Pacchierotti**. "Comparison of cutaneous feedback methods for pinching palpation in robotic surgery." *Intuitive Surgical Inc.*, Santa Clara, USA, 2016.

T36. **C. Pacchierotti**. "Haptic feedback for robot-assisted surgery and telemanipulation." *IRISA and Inria Rennes-Bretagne Atlantique*, Rennes, France, 2015.

T37. **C. Pacchierotti**. "Cutaneous feedback of fingertip deformation and vibration for palpation in robotic surgery." *Workshop on "Cutaneous Feedback for Teleoperation in Medical Robotics"*, IEEE World Haptics (WHC), Chicago, USA, 2015.

T38. **C. Pacchierotti**. "Improving the performance and safety of robotic teleoperation systems via cutaneous haptic feedback." *University of Groningen*, Groningen, The Netherlands, 2015.

T39. **C. Pacchierotti**. "Cutaneous haptic feedback in robotic teleoperation." *University of Edinburgh*, Edinburgh, United Kingdom, 2015.

T40. **C. Pacchierotti**. "Enhancing the performance of robotic teleoperation systems via cutaneous feedback." *University of Agder*, Grimstad, Norway, 2015.

T41. **C. Pacchierotti**. "Cutaneous haptic feedback in robotic teleoperation." *Semi-plenary at the IEEE World Haptics Conference (WHC)*, Chicago, USA, 2015.

T42. **C. Pacchierotti**. "Wearable haptics: cutaneous feedback and teleoperation." *Workshop on "Wearable haptics: from neurophysiology foundations to new wearable haptic designs and exoskeletons", IEEE Haptics Symposium (HAPTICS)*, Houston, USA, 2014.

Patents

P1. D. Prattichizzo, M. Malvezzi, F. Chinello, **C. Pacchierotti**. "A task-custom finger device for kinesthetic and cutaneous feedback." *International Patent #WO/2017/194527, filed May 9, 2017.* [WEB]

Professional and University Service

Editorial service

Associate Editor, IEEE Transactions on Haptics, 2024 – 2026.

Associate Editor, IEEE Virtual Reality (VR), 2025.

Associate Editor, International Journal of Robotics Research, 2023 – 2025.

Guest co-editor, IEEE Transactions on Haptics for the Special Issue "Haptics in the metaverse: Haptic feedback for Virtual, Augmented, Mixed, and eXtended Realities" (2024).

Associate Editor, IEEE World Haptics (WHC), held online, 2021.

Associate Editor, IEEE Robotics and Automation Letters (RA-L), 2021 – 2022.

Associate Editor, Eurohaptics, Leiden, The Netherlands, 2018.

Associate Editor, IEEE International Conference on Robotics and Automation (ICRA), 2020, 2021, and 2022.

Associate Editor, Eurohaptics, Pisa, Italy, 2018.

Guest Associate Editor, IEEE Transactions on Haptics, IEEE HAPTICS (2020) and IEEE WHC (2021) tracks.

Guest co-editor, IEEE Transactions on Haptics for the Special Issue "Wearable and Hand-Held Haptics" (2019).

Program Committees, Conference Organization, and Other Research Leadership Roles

Program Chair, Eurohaptics Conference, Siena, Italy, 2026.

Student Volunteers Co-Chair, IEEE Virtual Reality (VR), France, 2025.

Demonstrations Co-Chair, IEEE World Haptics (WHC), Korea, 2025.

Program Co-Chair and **Conference Editorial Board**, Eurohaptics Conference, Lille, France, 2024.

Work-In-Progress Co-Chair, IEEE World Haptics, Delft, The Netherlands, 2023.

Conference Editorial Board, Eurohaptics Conference, Hamburg, Germany, 2022.

Cross-Cutting Challenge Chair, IEEE Haptics Symposium (HAPTICS), Santa Barbara, USA, 2022.

Cross-Cutting Challenge Chair, IEEE World Haptics (WHC), Montreal, Canada, 2021.

Publicity Co-Chair, AsiaHaptics, Beijing, China, 2020 (postponed to 2022 due to COVID-19).

Demonstrations Co-Chair, IEEE Haptics Symposium (HAPTICS), Washington DC, USA, 2020.

Program Committee member, IEEE World Haptics, Tokyo, Japan, 2019.

Remote Panel Member (review of projects proposals), European Science Foundation (ESF), 2018 – 2023.

Award Co-Chair (Best Poster), and Session Co-Chair, Eurohaptics, Pisa, Italy, 2018.

Co-Organizer (with L. Meli and D. Prattichizzo) of the Cross-Cutting Challenge "Expanding sensory interactions: the path to intelligent clothes and objects able to change the way we communicate with the world," IEEE Haptics Symposium (HAPTICS), San Francisco, USA, 2019. Only two Cross-Cutting Challenges were organized, with around 300 attendees.

Program Committee, Robotics Science and Systems (RSS), 2018 and 2020.

Publicity Co-Chair, AsiaHaptics, 2018.

Track Co-Chair, European, Mediterranean and Middle Eastern Conference on Information Systems (EMCIS), Track on Immersive Technologies in IT/IS, 2018.

Publicity Chair and Associate Editor, IEEE World Haptics (WHC), Münich, Germany, 2017.

Judge, "Hans Fischer Senior Fellowship", Institute for Advanced Study (IAS), Technical University of Münich (TUM), Germany, 2017.

Institute of Electrical and Electronics Engineers (IEEE)

Co-Chair, IEEE Technical Committee on Telerobotics (2023 – 2026).

Senior Chair, IEEE Technical Committee on Haptics (2021 – 2024).

Coordinator, Open-access action, IEEE Technical Committee on Haptics (from 2019).

Chair, IEEE Technical Committee on Haptics (2018 – 2021).

Judge, "Robotics Made in Italy Video Contest," IEEE Robotics & Automation Society Italian Chapter, 2017.

Senior Reviewer, IEEE Robotics & Automation Society Young Reviewers Program (2016 – 2022).

Member of the IEEE Robotics & Automation Society Italian Chapter (I-RAS) secretariat (2006 – 2010).

Eurohaptics Society

Chair, Eurohaptics Best PhD Thesis Award, 2022.

Secretary, Eurohaptics Society (2018 – 2022, 2022 – 2026).

Jury, Eurohaptics Best PhD Thesis Award, 2017.

Groupement de Recherche (GdR) en Robotique

Jury, Prix de thèse, 2024.

Co-organizer (co-animateur) of the scientific thematics 4 "Human-centered robotics" (TS4 "Robotique centrée sur l'humain", 2024 onwards).

Institut de Recherche en Informatique et Systèmes Aléatoires (IRISA)

Mentor, under the action "accompagnement de personnels enseignant-chercheurs et chercheurs" (2018 – 2024).

Centre Inria de l'Université de Rennes

Permanent member (membre titulaire), Comité de centre (2023 – 2026).

Workshop and Tutorial Organization

Co-Organizer (with O. Georgiou, I. Loucaidou, J. Saint-Aubert) of the workshop on "The Role and Opportunity of AI in Haptics," Eurohaptics, Lille, France, 2024.

Co-Organizer (with N. D'Aurizio, M. Pozzi, T. Lisini Baldi) of the workshop on "Enabling artificial agents to communicate with humans through touch," Eurohaptics, Lille, France, 2024.

Co-Organizer (with F. Chinello, C. Fang, H. Seifi) of the tutorial on "Frontiers in Haptic Technology and Interaction Design: the Challenges, the Technology, the Perspectives ," NordCHI, Aarhus, Denmark, 2022.

Co-Organizer (with M. Cognetti, D. Prattichizzo, and J-H. Ryu) of the workshop on "Haptic-enabled shared control of robotic systems: a compromise between teleoperation and autonomy," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Madrid, Spain, 2018.

Co-Organizer (with M. Otaduy and D. Prattichizzo) of the workshop on "Wearable and portable haptics for VR and AR," IEEE International Conference on Virtual Reality (VR), Reutlingen, Germany, 2018.

Co-Organizer (with S. Sinclair, M. Solazzi, A. Frisoli, V. Hayward, and D. Prattichizzo) of the workshop on "Wearable haptic systems: design, applications, and perspectives," IEEE World Haptics Conference (WHC), Münich, Germany, 2017. The workshop has been the most attended workshop of the conference (100+ attendees!).

Co-Organizer (with K. J. Kuchenbecker and D. Prattichizzo) of the workshop on "Cutaneous feedback for teleoperation in medical robotics," IEEE World Haptics Conference (WHC), Chicago, USA, 2015.

Dept. Information Engineering and Mathematics, University of Siena, Siena, Italy

Member of the Orientation Committee and of the Graduate Curriculum Committee (2010 – 2011).

Reviews (Publons profile, 99th percentile of users for numbers of reviews)

Journal papers review (selected): IEEE Transactions on Haptics, Science Robotics, IEEE Transactions on Robotics, IEEE Transactions on Mechatronics, Journal of Biomedical and Health Informatics, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Human-Machine Systems, IEEE Transactions on Automation Science and Engineering, International Journal of Computer Assisted Radiology and Surgery, IEEE Robotics & Automation Letters, Presence: Teleoperators and Virtual Environments, Electronics, Micromachines, and Sensors.

Conference papers review (selected): IEEE Haptics Symposium, Eurohaptics, IEEE International Conference on Robotics and Automation (ICRA), IEEE World Haptics (WHC), IEEE/RJS International Conference on Intelligent Robots and Systems (IROS), IEEE Int. Conference on Biomedical Robotics and Biomechatronics (BioRob), IEEE Humanoid Robots (Humanoids), Automatica.it, Annual Conference of IEEE Industrial Electronics Society (IECON), IMEKO TC4, IEEE Symposium on 3D User Interfaces (3DUI), Robotics: Science & Systems (RSS).

Book proposals review: Elsevier, Springer.

Grants: European Science Foundation, Swiss National Science Foundation.

Teaching

École Polytechnique, Paris, France

Teacher for the course "INF644 – Virtual/Augmented Reality & 3D Interactions" (6h) for the Master "Artificial Intelligence and Advanced Visual Computing" (Feb 2021, Mar 2022, Mar 2023, Mar 2024).

Polytechnic University of Turin, Turin, Italy

Teacher for the course "Haptics: Science and Technology of Touch" (5h) for the Doctoral School on "Computer and Control Engineering" (Jan 2023).

Université de Rennes, Rennes, France

Teacher for the course "Virtual Reality and Multi-Sensory Interaction" (4h) for the Master "Informatique, parcours Science informatique (SIF)" (Dec 2020, Dec 2021, Nov 2022, Dec 2023, Dec 2024).

Teacher for the course "Mechatronics Assistive Devices" (2h) for the Master "Sciences Pour l'Ingénieur et Applications (SPIA)" (Oct 2023, Oct 2024).

University of Rome "La Sapienza"

Lecturer for the course "Medical robotics" (6h) for the Master "Artificial Intelligence and Robotics" (Apr 2022).

Lecturer for the course "Medical robotics" (2h) for the Master "Artificial Intelligence and Robotics" (Apr 2020).

University of Siena, Siena, Italy

Teaching Assistant for the courses "Robotics II" (Fall 2014), "Robotics I" (Fall 2011), and "Human-centered robotics" (Spring 2011)

Teacher for the courses "Elements of control systems" (Fall 2012) and "LaTeX for beginners" (Jun 2011 and Mar 2012).

Advising

- *Postdoctoral Researchers*

1. Marco Ferro, started Sept 2022 (supervision at 50%, co-supervised with P. Robuffo Giordano).
   PostDoc at IRISA, Rennes, France.
   Project: "Active sensing for robotic dosimetry systems."
2. Elodie Bouzbib, Dec 2021 – Nov 2023 (50%, co-supervised with A. Lécuyer).
   PostDoc at IRISA, Rennes, France.
   Project: "Novel interactions in VR mediated by encounter-type haptic interfaces."
3. Thomas Howard, Oct 2018 – Nov 2023 (50%, co-supervised with M. Marchal).
   PostDoc at IRISA, Rennes, France.
   Project: "H-Reality: Mixed Haptic Feedback for Mid-Air Interactions in VR/AR."
4. Panagiotis Kourtesis, Nov 2020 – Aug 2022 (50%, co-supervised with F. Argelaguet).
   PostDoc at IRISA, Rennes, France.
   Project: "Tactile feedback enriched virtual interaction through virtual reality and beyond."
5. Gennaro Notomista, Nov 2020 – Sept 2021 (50%, co-supervised with P. Robuffo Giordano).
   PostDoc at IRISA, Rennes, France.
   Project: "Shared control for multi-robot systems."
6. Marco Aggravi, Feb 2017 – Aug 2021 (50%, co-supervised with P. Robuffo Giordano).
   PostDoc at IRISA, Rennes, France.
   Project: "Wearable haptics for the intuitive control of unmanned aerial vehicles.'
7. Firas Abi Farraj, Jan – Jun 2019 (50%, co-supervised with P. Robuffo Giordano).
   PostDoc at IRISA, Rennes, France.
   Project: "Contributions to shared control architectures for advanced telemanipulation."
8. João Bimbo, Mar – Nov 2016 (50%, co-supervised with D. Prattichizzo).
   PostDoc at the Italian Institute of Technology (IIT), Genova, Italy.
   Project: "Robotic controllers for performing soft, gentle, and strong manipulation."
9. Leonardo Meli, Aug – Nov 2016 (50%, co-supervised with D. Prattichizzo).
   PostDoc at the University of Siena, Siena, Italy.
   Project: "Wearable haptic interfaces for robot-assisted surgery applications."

- *Ph.D. Students*

1. Yuxin Jin, started September 2023 (50%, co-supervised with S. Misra)
   Ph.D. student at the University of Twente, Eschede, The Netherlands.
   Project: "Detection and tracking of microagents using Artificial Intelligence."
2. Jessé Alves, started November 2024 (100%, director)
   Ph.D. student at IRISA and Université de Rennes, Rennes, France.
   Project: "Human-robot interaction and shared control for robotic telemanipulation."
3. Sara Rossi, started February 2024 (50%, co-supervised with M. Marchal, co-director).
   Ph.D. student at IRISA and INSA Rennes, Rennes, France.
   Project: "Tactile haptic perception and rendering for robotic prosthesis."
4. Léon Raphalen, started September 2023 (100%, director).
   Ph.D. student at IRISA and Université de Rennes, Rennes, France.
   Project: "Human-centered shared control of multi-robot systems at the microscale."
5. Antonio Marino, started September 2022 (50%, co-supervised with P. Robuffo Giordano, co-director).
   Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
   Project: "Machine learning techniques for the control of multi-robot systems."
6. Lendy Mulot, started October 2022 (50%, co-supervised with M. Marchal, co-director).
   Ph.D. student at IRISA and INSA Rennes, Rennes, France.
   Project: "Design of coupling schemes for vibrotactile rendering in virtual reality."

7. Maxime Bernard, started October 2021 (50%, co-supervised with P. Robuffo Giordano).
   Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
   Project: "Shared control for multi-robot systems."
8. Pierre-Antoine Cabaret, started October 2021 (50%, co-supervised with M. Marchal and M. Babel)
   Ph.D. student at IRISA and INSA Rennes, Rennes, France.
   Project: "Design of navigation techniques for a multisensory handle for mobility assistance.".
9. Erwan Normand, started October 2021 (33%, co-supervised with M. Marchal and E. Marchand)
   Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
   Project: "Augmenting the interaction with everyday objects with wearable haptics and AR"
10. Inès Lacôte, started January 2021 (33%, co-supervised with M. Marchal, D. Gueorguiev)
    Ph.D. student at IRISA and INSA Rennes, Rennes, France, in collaboration with ISIR, Paris.
    Project: "Study of haptic and multisensory illusions to design a navigation assistance handle"
11. Lisheng Kuang, defended June 2023 (60%, co-supervised with P. Robuffo Giordano, co-director).
    Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
    Project: "Design and development of novel wearable haptic interfaces for teleoperation of robots."
12. Alberto Jovane, defended December 2022 (25%, co-supervised with J. Pettré, L. Hoyet, M. Christie).
    Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
    Project: "Modélisation de mouvements réactifs et comportements non verbaux pour la création d'acteurs digitaux pour la réalité virtuelle."
13. Adèle Colas, defended November 2022 (25%, co-supervised with J. Pettré, L. Hoyet, A. Olivier).
    Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
    Project: "Modélisation de comportements collectifs réactifs et expressifs pour la réalité virtuelle."
14. Sebastian Vizcay, defended December 2022 (33%, co-supervised with M. Marchal and F. Argelaguet).
    Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
    Project: "Dexterous Interaction in Virtual Reality using High-Density Electrotactile Feedback."
15. Rahaf Rahal, defended Dec 2020 (50%, co-supervised with P. Robuffo Giordano).
    Ph.D. student at IRISA and Université de Rennes 1, Rennes, France.
    Project: "Shared Control and Authority Distribution for Robotic Teleoperation." PDF
16. Xavier De Tinguy de la Girouliere, defended Dec 2020 (50%, co-supervised with M. Marchal).
    Ph.D. student at IRISA and INSA Rennes, Rennes, France.
    Project: "Rendu haptique en Réalité Virtuelle lors de l'interaction avec des objets tangibles." PDF
17. Olmo Alonso Moreno Franco, graduated Feb 2019 (50%, co-supervised with D. Prattichizzo).
    Ph.D. student at the Italian Institute of Technology (IIT), Genova, Italy.
    Project: "Tank-based passivity control approaches in robotic teleoperation systems with cutaneous haptic feedback."
18. Leonardo Meli, graduated Jul 2016 (50%, co-supervised with D. Prattichizzo).
    Ph.D. student at the Italian Institute of Technology (IIT), Genova, Italy.
    Project: "Mixing kinesthetic and vibrotactile haptic feedback to improve robot-assisted surgery."
19. Asad Tirmizi, graduated Apr 2016 (70%, co-supervised with D. Prattichizzo).
    Ph.D. student at the University of Siena, Siena, Italy.
    Project: "Attuning cutaneous, vibrotactile, and kinesthetic components of haptic feedback in teleoperation."
    (Winner of the "SIDRA Award" for the best Italian PhD thesis in Systems and Control Engineering).

- *Engineers*
  1. Guillaume Gicquel, Oct 2018 – Oct 2023 (50%, co-supervised with M. Marchal).
     Engineer at IRISA, Rennes, France.
     Project: "H-Reality: Mixed Haptic Feedback for Mid-Air Interactions in VR/AR."
  2. Sébastien Thomas, started Oct 2021 (33%, co-supervised with M. Babel, M. Marchal).
     Engineer at IRISA, Rennes, France.
     Project: "DORNELL: A Multimodal, Shapeable Haptic Handle for Mobility Assistance of People with Disabilities."

- *Masters Thesis Students*

1. Ilaria Pasini, graduating May 2025.
   M.S. student at the Politecnico di Torino.
   Project: "Pseudohaptics in Augmented Reality for altering the perception of the real world."
2. Filippo Gerbaudo, graduating May 2025.
   M.S. student at the Politecnico di Torino.
   Project: "HapticMic: studying the persuasive effects of haptics during speech-based interactions."
3. Filippo Gerbaudo, graduating May 2025.
   M.S. student at the Politecnico di Torino.
   Project: "HapticMic: studying the persuasive effects of haptics during speech-based interactions."
4. Francesca Porro, graduating Mar 2025.
   M.S. student at the Politecnico di Torino.
   Project: "Serious gaming for haptic-enabled assistive robotic navigation techniques."
5. Nicolas Martinet, graduated Aug 2024.
   M.S. student at Université Paris-Saclay.
   Project: "Artificial Intelligence methods for the automatic generation of haptic content."
6. Gauthier Gendreau, graduated Aug 2023 (co-supervised with A. Lécuyer).
   M.S. student at De Vinci Innovation Center.
   Project: "Conception and evaluation of pseudo-haptic effects in Augmented Reality."
7. Noé Guillaumin, graduated Aug 2023 (co-supervised with A. Lécuyer).
   M.S. student at De Vinci Innovation Center.
   Project: "Conception and evaluation of swarms of modular haptic interfaces in Augmented Reality."
8. Quentin Zanini, graduated July 2023 (co-supervised with M. Marchal).
   M.S. student at INSA Rennes.
   Project: "Study of multisensory contacless haptic interactions in Mixed Reality."
9. Nicolas Laurent, graduated Aug 2022 (co-supervised with A. Lécuyer).
   M.S. student at École nationale supérieure d'arts et métiers (ENSAM).
   Project: "Design et evaluation d'une interface tangible reconfigurable en Réalité Virtuelle."
10. Jeanne Hecquard, graduated Aug 2022 (co-supervised with M. Macé).
    M.S. student at INSA Rennes.
    Project: "Conception et évaluation de rendus haptiques affectifs."
11. Mathis Robert, graduated Aug 2022 (co-supervised with M. Tognon).
    M.S. student at INSA Rennes.
    Project: "Physical Human-Aerial Robot Interaction (pHARI) for guidance."
12. Lendy Mulot, graduated Aug 2022 (co-supervised with M. Marchal).
    M.S. student at the École Normale Supérieure (ENS) Rennes, Rennes, France.
    Project: "Conception et évaluations d'approches de rendus haptiques par ultrasons pour l'interaction bimanuelle en réalité virtuelle."
13. Octavie Somoza, graduated Aug 2021 (co-supervised with A. Lécuyer).
    M.S. student at Université de Poitiers, Poitiers, France.
    Project: "Encouter-type haptics and kinesthetic exoskeletons for Virtual Reality interaction."
14. Pierre-Antoine Cabaret, graduated Aug 2021 (co-supervised with M. Marchal).
    M.S. student at Institut National de Science Appliquées (INSA), Rennes, France.
    Project: "Mixed haptics for manipulation in Virtual Reality based on a novel wearable tangible shape display."
15. Emilie Hummel, graduated Aug 2021 (co-supervised with V. Gouranton).
    M.S. student at Institut National de Science Appliquées (INSA), Rennes, France.
    Project: "Haptic interaction for exhibiting archaeology."
16. Divyesh Kanagavel, graduated Aug 2021.
    M.S. student at École Centrale de Nantes (EMARO), Nantes, France.
    Project: "Human-robot interaction for object grasping with multi-robot systems."

17. Hussein Lekkaik, graduated Aug 2021.
    M.S. student at Université de technologie de Compiègne, Compiègne, France.
    Project: "Active sensing control for robotic systems."
18. Sunny Nazeer, graduated Aug 2020.
    M.S. student at École Centrale de Nantes (EMARO), Nantes, France.
    Project: "AI-enabled control system for the intuitive and effective control of a team of drones."
19. Hugo Kohli, graduated Feb 2020 (co-supervised with F. Schiano, M. Macchini, D. Floreano).
    M.S. student at Ecole polytechnique fédérale de Lausanne (EPFL), Lousanne, Switzerland.
    Project: "AI-enabled control system for the intuitive and effective control of a team of drones."
20. Ahmed El-shrief, graduated Aug 2019.
    M.S. student at École Centrale de Nantes (EMARO), Nantes, France.
    Project: "Shared control of drones with wearable haptic interfaces."
21. Alexandre Bonneau, graduated July 2019 (co-supervised with J. Pettré).
    M.S. student at École Normale Supérieure (ENS) Rennes, Rennes, France.
    Project: "Haptic rendering of virtual contacts in crowded environments."
22. Steeven Villa Salazar, started Feb 2019 (co-supervised with M. Marchal).
    M.S. student at the Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
    Project: "Development of Virtual Reality scenes rendered using ultrasound and vibrotactile haptic interfaces."
23. Giulia Matarese, graduated Sept 2019.
    M.S. student at the University of Pisa, Pisa, Italy
    Project: "Shared-control of robotic teleoperation systems with wearable haptic guidance."
24. Giuseppe Sirignano, graduated Apr 2018 (co-supervised with P. Robuffo Giordano).
    M.S. student at the University of Salerno, Salerno, Italy
    Project: "Human-multi robot interaction."
25. Florent Pausé, graduated Sept 2017 (co-supervised with P. Robuffo Giordano).
    M.S. student at Institut National de Science Appliquées (INSA) Strasbourg, Strasbourg, France.
    Project: "Wearable haptic interfaces for the intuitive teleoperation of Unmanned Aerial Vehicles (UAVs)."
26. Maurizio Maisto, graduated Nov 2016 (co-supervised with D. Prattichizzo).
    M.S. student at the University of Rome "La Sapienza," Roma, Italy.
    Project: "Wearable haptics for virtual and augmented reality."
27. Leonardo Meli, graduated Jul 2012 (co-supervised with D. Prattichizzo).
    M.S. student at the University of Siena, Siena, Italy.
    Project: "A novel approach for two fingers grasping devices with cutaneous and kinesthetic force feedback."

• *Undegraduate Thesis Students*

1. Mirko Aurilio, graduated Oct 2014 (co-supervised with D. Prattichizzo).
   B.S. student at the University of Siena, Siena, Italy.
   Project: "The HapBand: un dispositivo cutaneo per l'interazione tattile remota."
2. Omar Al Atassi, graduated Dec 2011 (co-supervised with D. Prattichizzo).
   B.S. student at the University of Siena, Siena, Italy.
   Project: "Design of a robotic finger for grasping enhancement."

• *Non-Thesis Students*
We recurrently host L3 and M1 students for short internships, usually between 1 and 3 months.

• *Visiting doctoral students*

1. Alessia Silvia Ivani, Jun 2023 - Oct 2024.
   Ph.D. student at the University of Pisa and Italian Institute of Technology.
   Project: "Embodiment of the visual and haptic representation of virtual prosthetics."

2. Danilo Troisi, Sep 2023 - Feb 2024.
   Ph.D. student at the University of Pisa.
   Project: "Haptic thermal handle for Virtual Reality interaction."
3. Raul Fernandez-Fernandez, Feb 2021 - Jun 2021.
   Ph.D. student at the Universidad Carlos III de Madrid.
   Project: "Style transfer techniques to convey emotions through robot movements."
4. Mario Selvaggio, Feb 2019 - July 2019.
   Ph.D. student at the University of Naples.
   Project: "Haptic shared control of a dual-arm telemanipulation system."

- *Thesis and Exam Committees*

2023 – 2026: Comités de Suivi Individuel du Doctorant (CSID) for Quentin Monnier (student of Kidiyo Kpalma, Université de Rennes, Rennes, France).

2023 – 2026: CSID for Enora Giffard-Broudic (student of Pierre Jannin, Université de Rennes, Rennes, France).

2023 – 2026: CSID for Marion Pontreau (student of Sinan Haliyo, CNRS/ISIR, Paris, France).

2022 – 2024: CSID for Thanh-loan Le (student of Malika Auvray, CNRS/ISIR, Paris, France).

2023: Ph.D. dissertation committee and rapporteur for Davide Calandra (student of Fabrizio Lamberti, Politecnico di Torino, Turin, Italy).

2022: Ph.D. dissertation committee for Frédéric Giraud (student of Jaime Paik, EPFL, Lousanne, Switzerland).

2021: Ph.D. dissertation committee (president) for Daniel Lobo Cuenca (student of Miguel Otaduy, Universidad Rey Juan Carlos, Madrid, Spain).

2019–2020: CSID for Victor Rodrigo Mercado (student of Anatole Lécuyer, Inria, Rennes, France).

2018: Ph.D. dissertation committee for Matteo Rossi (student of Antonio Bicchi, University of Pisa, Italy).

Ph.D. dissertation committee for Lucia Schiatti (student of Leonardo S. Mattos, University of Genova and Italian Institute of Technology, Italy).

2017: CSID for Antoine Costes (student of Anatole Lécuyer, Inria, Rennes, France).

Selected Press and public dissemination

- *GuestXR project (2022–2025)*

  Feb 23, 2023 – Sciences et Avenir – article "Réalité virtuelle : des vibrations qui dopent la confiance en soi" (FR).

  Apr 19, 2023 – Le Monde – article "Réalité virtuelle: des stimulations tactiles influencent nos interactions sociales" (FR).

- *RĔGO project (2022–2026)*

  Jun 2, 2022 – DR17 CNRS – article "RĔGO, un projet européen autour des micro-essaims de robots" (FR).

- *CNRS Bronze Medal (2022)*

  Dec 21, 2022 – La Gazzetta di Siena – "Claudio Pacchierotti, giovane ricercatore senese" (IT)

  Nov 29, 2022 – INS2I CNRS – video "Claudio Pacchierotti, haptique" (FR/EN).

  Jun 9, 2022 – INS2I CNRS – article "L'haptique, une nouvelle dimension du virtuel : Claudio Pacchierotti, lauréat de la médaille de bronze du CNRS" (FR).

- *H-Reality FET-OPEN project and FET Innovation Launchpad E-TEXTURES project (2018–2022)*

  Apr 01, 2023 – Science & Vie – "Odorat, toucher: La réalité virtuelle s'en empare" (FR).

  Jan 18, 2022 – CNRS Innovation – "E-Textures : toucher les objets numériques grâce à l'haptique sans contact" (FR).

May 10, 2022 – Les Echos – "La réalité virtuelle entre dans l'ère du tactile" (FR).

May 1, 2022 – Travail & Sécurité – "Parce que, parfois, l'essentiel est invisible pour les yeux" (FR).

Feb 22, 2022 – Handelsball – "Das Internet anfassen: wie haptik-technologie das metaversum ermöglicht" (DE).

Oct 10, 2021 – Science Ouest – "La réalité virtuelle au bout des doigts" (FR).

Jun 25, 2021 – CNRS Le Journal – "La réalité virtuelle enfin tactile" (FR) and article "Feeling virtual reality at last" (EN).

Jun 25, 2021 – Le Monde – "Le sens du toucher fait son entrée dans la réalité virtuelle" (FR).

Mar 10, 2021 – FETFX – "Touching the air may be possible with new research on haptics" (EN).

- *Article Maisto et al. (2017)*

Apr 25, 2017 – Science Magazine – "Finger devices let users *touch* virtual objects" (EN).

Apr 25, 2017 – ANSA – "Tatto virtuale per videogiochi, e-commerce e chirurgia" (IT).

- *AsiaHaptics Silver Award (2016)*

Dec 7, 2016 – SienaFree – "AsiaHaptics Silver Award per il laboratorio di Robotica e Sistemi dell'Università di Siena" (IT).

Dec 7, 2016 – La Nazione – "Robotica indossabile da premio a Tokyo" (IT).

Dec 7, 2016 – Il Corriere di Siena – "Il gruppo del Professor Prattichizzo premiato a Tokyo" (IT).

Dec 6, 2016 – Il Cittadino – "AsiaHaptics Silver Award per il laboratorio di Robotica e Sistemi dell'Università di Siena" (IT).

- *Haptics Symposium Best Demonstration Award (2016)*

Jul 26, 2016 – Il Corriere di Siena – "Ecco il robot che aiuta nella riabilitazione fisica dopo l'ictus" (IT).

Jul 26, 2016 – Radio Siena TV – "Protesi robotica indossabile per pazienti con ictus ideata a Siena" (IT).

May 11, 2016 – inToscana.it – "Le protesi indossabili dell'Ateneo di Siena conquistano Philadelphia" (IT).

May 6, 2016 – Agenzia Giornalistica Italia – "A Siena protesi robotica per migliore funzionalità mani" (IT).

May 6, 2016 – Oggi Scienza – "Robotica e disabilità: gli studi vincenti dell'Università di Siena" (IT).

May 12, 2016 – Ok Salute e Benessere – "Ictus: ecco il sesto dito robotico che aiuta la mano paralizzata" (IT).

May 11, 2016 – Sienafree.it – "Una protesi robotica indossabile per i pazienti affetti da ictus sviluppata all'Università di Siena" (IT).

- *EuroHaptics Best PhD Award (2014)*

Dec 3, 2015 – SiBlogga! – interview "Una tesi fant-aptica. L'interSvista all'autore: Claudio Pacchierotti" (IT).

Aug 11, 2015 – GeniusLab – "Da IIT una tecnologia per dare ai chirurghi il senso del tatto a distanza durante le operazioni con i robot" (IT).

Jul 16, 2015 – La Nazione – "La migliore tesi di dottorato è di uno studente senese" (IT).

- *RemoTouch project (2010)*

Jun 1, 2017 – Radio 24 – "Tatto virtuale: come funziona la tecnologia che vuole rivoluzionare la realtà virtuale" (IT).

Dec 13, 2013 – La Repubblica – "L'archivio delle carezze le nostre emozioni in un file" (IT).

Mar 27, 2010 – Sky TG24 – interview "Io Reporter" (IT).

Mar 22, 2010 – La Repubblica.it/Affari&Finanza – "Il tocco esperto del medico arriva via Skype" (IT).

Mar 16, 2010 – Il Corriere di Siena – "Esperienze tattili a distanza" (IT).