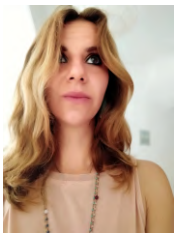
Personal information



Surname(s) / First name(s)	**Villani Valeria**
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Short bio

Valeria Villani is Assistant Professor at the Department of Sciences and Methods for Engineering of the University of Modena and Reggio Emilia.
She received her B.Sc. and M.Sc. in Biomedical Engineering from the University Campus Bio-Medico of Rome in 2006 and 2009, respectively, and her Ph.D. in Biomedical Engineering from the University Campus Bio-Medico of Rome in 2013, focusing on biomedical signal processing, with emphasis on ECG signals. She was the recipient of the Best Paper Award at ISABEL 2011 and the Mortara Fellowship at CinC 2014.
Her research interests focus on the analysis of human factors in human-system interaction and the design of human-centred user interfaces for efficient cooperation between the human and industrial machines or robots. Moreover, she has solid background in biomedical signal processing, which she has been applying to robot control and affective human-robot interaction.
She was the Technical Coordinator of the H2020 European project “Smart and adaptive interfaces for INCLUSIVE work environment” (INCLUSIVE, GA n. 723373). She was also part of the Management Team of the project and coordinated interactions among project partners and with the European Commission, facilitating a smooth progress of project activities. Moreover, she was the Technical Coordinator of the experiment “COllaborative robot aMPLifying and Extending huMAN capabiliTies” (COMPLEMANT), which was part of the H2020 European project “Smart integrated Robotics system for SMEs controlled by Internet of Things based on dynamic manufacturing processes” (HORSE, GA n. 680734).
She is currently Associate Editor for IEEE Transactions on Automation Science and Engineering and has been appointed as Associate Editor for the IEEE international conferences IROS in 2023 and ICRA since 2018. Moreover, she served as Guest Editor for the Special Issue on Human-Robot Collaboration in Industrial Applications of Mechatronics (Elsevier) in 2018. She was also member of the Program Committee of IFAC HMS 2019 and co-organized the Workshops “WORKMATE 2018: the WORKplace is better with intelligent, collaborative, robot MATEs” at IEEE ICRA 2018, “Design, Learning, and Control for Safe Human-Robot Collaboration” at IEEE ICAR 2021 and “SOLAR: Socially-acceptable robots concepts, techniques, and applications” at IEEE ICRA 2023. She was General Chair for the 12th International Workshop on Human-Friendly Robotics (HFR 2019).
She was reviewer for the project “Credible & Safe Robot Systems” (CredRoS) funded to JOANNEUM RESEARCH ROBOTICS by the Austrian Ministry for Transport, Innovation and Technology. Moreover, she was appointed expert evaluator by the European Commission for project proposals in the call HORIZON-CL4-2023-HUMAN-01-CNECT.

Position

Dates	August 2022 – today
Position	**Assistant professor (tenure track)**
Main topics	Human-robot and human-machine interaction; human factors in robotics and automation applications
Institution	University of Modena e Reggio Emilia

Education and Previous Academic Experience

Dates	February 2022 – July 2022
Position	**Post–doc research fellow**
Main topics	Human-robot interaction and analysis of human factors in robotics; user modeling for affective robotics and adaptive human-robot interaction
Institution	University of Modena e Reggio Emilia
Dates	February 2017 – January 2022
Posizione	**Assistant Professor**
Main topics	Human-robot interaction and analysis of human factors in robotics; user modeling for affective robotics and adaptive human-robot interaction
Institution	University of Modena e Reggio Emilia
Dates	January 2015 – January 2017
Position	**Post–doc research fellow**
Main topics	Design of human-machine interfaces for robotics and automation applications
Institution	University of Modena e Reggio Emilia
Dates	April 2013 – January 2015
Position	**Research fellow**
Main topics	Biomedical signal processing, with emphasis on electrocardiogram and RR series
Institution	University Campus Bio-Medico of Rome
Dates	January 2010 – April 2013
Certificate or diploma	**PhD in Biomedical Engineering**, (financed with scholarship)
Thesis	A framework for ECG signal processing based on quadratic variation reduction
Main topics	Biomedical signal processing, electrocardiogram, quadratic variation reduction
Institution	University Campus Bio-Medico of Rome
Dates	November 2006 – February 2009
Certificate or diploma	**Master's Degree in Biomedical Engineering**
Thesis	Analysis of biomedical images by means of textures modeled as Markov random fields (in Italian: Analisi di immagini biomedicali mediante estrazione di tessiture modellate come campi aleatori markoviani)
Mark	110/110 summa cum laude
Institution	University Campus Bio-Medico of Rome
Dates	October 2003 – October 2006
Certificate or diploma	**Bachelor's Degree in Biomedical Engineering**
Thesis	Systems for controlled release of drugs in intracranial cavity: control and sensorization (in Italian: Sistemi per il rilascio controllato di farmaci nella cavità intracranica: aspetti di sensorizzazione e controllo)
Mark	110/110 summa cum laude
Institution	University Campus Bio-Medico of Rome

Scientific publications

International journals

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[5] Elisa Prati, Valeria Villani, Margherita Peruzzini, and Lorenzo Sabattini. An approach based on VR to design industrial human-robot collaborative workstations. Applied Sciences, 11(24), 2021

[6] Valeria Villani, Lorenzo Sabattini, Paulina Barańska, Enrico Callegati, Julia N. Czerniak, Adel Debbache, Mina Fahimipirehgalin, Andreas Gallasch, Frieder Loch, Rosario Maida, Alexander Mertens, Zofia Mockałło, Francesco Monica, Verena Nitsch, Engin Talas, Elisabetta Toschi, Birgit Vogel-Heuser, Jeanmarc Willems, Dorota Żołnierczyk-Zreda, and Cesare Fantuzzi. The INCLUSIVE system: A general framework for adaptive industrial automation. IEEE Transactions on Automation Science and Engineering, 18(4):1969 – 1982, 2021

[7] Valeria Villani, Lorenzo Sabattini, Frieder Loch, Birgit Vogel-Heuser, and Cesare Fantuzzi. A general methodology for adapting industrial HMIs to human operators. IEEE Trans. Automation Science and Engineering, 18(1):164 – 175, 2021

[8] Julia N. Czerniak, Nikolas Schierhorst, Valeria Villani, Lorenzo Sabattini, Christopher Brandl, Alexander Mertens, Maximilian Schwalm, and Verena Nitsch. The index of cognitive activity - eligibility for task-evoked informational strain and robustness towards visual influences. Applied Ergonomics, 92:1033–1042, 2021

[9] Valeria Villani, Massimiliano Righi, Lorenzo Sabattini, and Cristian Secchi. Wearable devices for the assessment of cognitive effort for human-robot interaction. IEEE Sensors Journal, 20(21):13047–13056, 2020

[10] Valeria Villani, Beatrice Capelli, Cristian Secchi, Cesare Fantuzzi, and Lorenzo Sabattini. Humans interacting with multi-robot systems: a natural affect-based approach. Autonomous Robots, 44(3):601–616, 2020

[11] Valeria Villani, Julia N. Czerniak, Lorenzo Sabattini, Alexander Mertens, and Cesare Fantuzzi. Measurement and classification of human characteristics and capabilities during interaction tasks. Paladyn. Journal of Behavioral Robotics, 10(1):182–192, 2019

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[13] Valeria Villani, Fabio Pini, Francesco Leali, and Cristian Secchi. Survey on human-robot collaboration in industrial settings: Safety, intuitive interfaces and applications. Mechatronics, 55:248–266, 2018

[14] Valeria Villani, Lorenzo Sabattini, Julia N. Czerniak, Alexander Mertens, and Cesare Fantuzzi. MATE robots simplifying my work: benefits and socio-ethical implications. IEEE Robot. Automat. Mag., 25(1):37–45, 2018

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[17] Maurizio Muratore, Francesco Conversano, Maria Daniela Renna, Paola Pisani, Valeria Villani, and Sergio Casciaro. Social impact of osteoporotic fractures: Early diagnosis and possible therapies. Int. J. Measurement Technologies and Instrumentation Engineering (IJMTIE), 4(2):39–53, 2014

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[20] Valeria Villani, Beatrice Capelli, and Lorenzo Sabattini. A mixed reality system for interaction with heterogeneous robotic systems. In IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2023

[21] Valeria Villani, Marta Gabbi, and Lorenzo Sabattini. Promoting operator's wellbeing in industry 5.0: detecting mental and physical fatigue. In 2022 IEEE International Conference on Systems, Man, and Cybernetics (SMC), pages 2030–2036. IEEE, 2022

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Books editor

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Italian conferences

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PhD thesis

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