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Research Publications

Journal Articles

- 1 A. Frisoli, **M. Barsotti**, E. Sotgiu, G. Lamola, C. Procopio, and C. Chisari, "A randomized clinical control study on the efficacy of three-dimensional upper limb robotic exoskeleton training in chronic stroke," *Journal of NeuroEngineering and Rehabilitation*, vol. 19, no. 1, pp. 1–14, 2022.
- 2 D. Leonardis, M. Gabardi, **M. Barsotti**, and A. Frisoli, "Discrete cutaneous feedback for reducing dimensions of wearable haptic devices," *Frontiers in Virtual Reality*, vol. 3, p. 820 266, 2022.
- 3 R. Alicea, M. Xiloyannis, D. Chiaradia, **M. Barsotti**, A. Frisoli, and L. Masia, "A soft, synergy-based robotic glove for grasping assistance," *Wearable Technologies*, vol. 2, e4, 2021.
- 4 L. Ascari, A. Marchenkova, A. Bellotti, S. Lai, L. Moro, K. Koshmak, A. Mantoan, **M. Barsotti**, R. Brondi, G. Avveduto, *et al.*, "Validation of a novel wearable multistream data acquisition and analysis system for ergonomic studies," *Sensors*, vol. 21, no. 24, p. 8167, 2021.
- 5 **M. Barsotti**, G. M. Di Liberto, G. Vecchiato, J. Ambeck-Madsen, M. Del Vecchio, P. Avanzini, and L. Ascari, "Robust anticipation of continuous steering actions from electroencephalographic data during simulated driving," *Scientific reports*, vol. 11, no. 1, p. 23 383, 2021.
- 6 C. Camardella, **M. Barsotti**, D. Buongiorno, A. Frisoli, and V. Bevilacqua, "Towards online myoelectric control based on muscle synergies-to-force mapping for robotic applications," *Neurocomputing*, vol. 452, pp. 768–778, 2021.
- 7 A. Valenti, **M. Barsotti**, D. Bacciu, and L. Ascari, "A deep classifier for upper-limbs motor anticipation tasks in an online bci setting," *Bioengineering*, vol. 8, no. 2, p. 21, 2021.
- 8 I. Bortone, **M. Barsotti**, D. Leonardis, A. Crecchi, A. Tozzini, L. Bonfiglio, and A. Frisoli, "Immersive virtual environments and wearable haptic devices in rehabilitation of children with neuromotor impairments: A single-blind randomized controlled crossover pilot study," *Journal of neuroengineering and rehabilitation*, vol. 17, no. 1, pp. 1–14, 2020.
- 9 L. Cappello, W. Alghilan, M. Gabardi, D. Leonardis, **M. Barsotti**, A. Frisoli, and C. Cipriani, "Continuous supplementary tactile feedback can be applied (and then removed) to enhance precision manipulation," *Journal of NeuroEngineering and Rehabilitation*, vol. 17, pp. 1–13, 2020.
- 10 S. Tang, L. Chen, **M. Barsotti**, L. Hu, Y. Li, X. Wu, L. Bai, A. Frisoli, and W. Hou, "Kinematic synergy of multi-dof movement in upper limb and its application for rehabilitation exoskeleton motion planning," *Frontiers in Neurorobotics*, vol. 13, p. 99, 2019.
- 11 **M. Barsotti**, S. Dupan, I. Vujaklija, S. Došen, A. Frisoli, and D. Farina, "Online finger control using high-density emg and minimal training data for robotic applications," *IEEE Robotics and Automation Letters*, vol. 4, no. 2, pp. 217–223, 2018.
- 12 D. Buongiorno, **M. Barsotti**, F. Barone, V. Bevilacqua, and A. Frisoli, "A linear approach to optimize an emg-driven neuromusculoskeletal model for movement intention detection in myo-control: A case study on shoulder and elbow joints," *Frontiers in neurorobotics*, vol. 12, p. 74, 2018.
- 13 M. A. Padilla-Castañeda, E. Sotgiu, **M. Barsotti**, A. Frisoli, P. Orsini, A. Martiradonna, C. Laddaga, and M. Bergamasco, "An orthopaedic robotic-assisted rehabilitation method of the forearm in virtual reality physiotherapy," *Journal of healthcare engineering*, vol. 2018, 2018.

- 14 **M. Barsotti**, D. Leonardis, N. Vanello, M. Bergamasco, and A. Frisoli, "Effects of continuous kinaesthetic feedback based on tendon vibration on motor imagery bci performance," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 26, no. 1, pp. 105–114, 2017.
- 15 A. Frisoli, M. Solazzi, C. Loconsole, and **M. Barsotti**, "New generation emerging technologies for neurorehabilitation and motor assistance," *Acta Myologica*, vol. 35, no. 3, p. 141, 2016.
- 16 D. Leonardis, **M. Barsotti**, C. Loconsole, M. Solazzi, M. Troncossi, C. Mazzotti, V. P. Castelli, C. Procopio, G. Lamola, C. Chisari, *et al.*, "An emg-controlled robotic hand exoskeleton for bilateral rehabilitation," *IEEE transactions on haptics*, vol. 8, no. 2, pp. 140–151, 2015.
- 17 D. Leonardis, A. Frisoli, **M. Barsotti**, M. Carrozzino, and M. Bergamasco, "Multisensory feedback can enhance embodiment within an enriched virtual walking scenario," *Presence*, vol. 23, no. 3, pp. 253–266, 2014.
- 18 A. Frisoli, C. Loconsole, D. Leonardis, F. Banno, **M. Barsotti**, C. Chisari, and M. Bergamasco, "A new gaze-bci-driven control of an upper limb exoskeleton for rehabilitation in real-world tasks," *IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews)*, vol. 42, no. 6, pp. 1169–1179, 2012.

Conference Proceedings

- 1 A. Valenti, **M. Barsotti**, R. Brondi, D. Bacciu, and L. Ascari, "Ros-neuro integration of deep convolutional autoencoders for eeg signal compression in real-time bcis," in *2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, IEEE, 2020, pp. 2019–2024.
- 2 D. Buongiorno, C. Camardella, G. D. Cascarano, L. P. Murciego, **M. Barsotti**, I. De Feudis, A. Frisoli, and V. Bevilacqua, "An undercomplete autoencoder to extract muscle synergies for motor intention detection," in *2019 International Joint Conference on Neural Networks (IJCNN)*, IEEE, 2019, pp. 1–8.
- 3 C. Camardella, **M. Barsotti**, L. P. Murciego, D. Buongiorno, V. Bevilacqua, and A. Frisoli, "Evaluating generalization capability of bio-inspired models for a myoelectric control: A pilot study," in *International Conference on Intelligent Computing*, Springer, 2019, pp. 739–750.
- 4 C. Camardella, L. P. Murciego, S. Tang, F. Bertolucci, C. Chisari, **M. Barsotti**, and A. Frisoli, "Simple tool for functional and physiological stroke patients assessment," in *Converging Clinical and Engineering Research on Neurorehabilitation III: Proceedings of the 4th International Conference on NeuroRehabilitation (ICNR2018), October 16-20, 2018, Pisa, Italy* 5, Springer, 2019, pp. 779–782.
- 5 F. Missiroli, **M. Barsotti**, D. Leonardis, M. Gabardi, G. Rosati, and A. Frisoli, "Haptic stimulation for improving training of a motor imagery bci developed for a hand-exoskeleton in rehabilitation," in *2019 IEEE 16th International Conference on Rehabilitation Robotics (ICORR)*, IEEE, 2019, pp. 1127–1132.
- 6 L. P. Murciego, **M. Barsotti**, and A. Frisoli, "Synergy-based multi-fingers forces reconstruction and discrimination from forearm emg," in *Haptics: Science, Technology, and Applications: 11th International Conference, EuroHaptics 2018, Pisa, Italy, June 13-16, 2018, Proceedings, Part II* 11, Springer, 2018, pp. 204–213.
- 7 S. Tang, **M. Barsotti**, F. Stroppa, A. Frisoli, X. Wu, and W. Hou, "Upper limb joint angular velocity synergies of human reaching movements," in *2018 IEEE International Conference on Cyborg and Bionic Systems (CBS)*, IEEE, 2018, pp. 641–646.
- 8 **M. Barsotti**, E. Sotgiu, D. Leonardis, G. Sgherri, G. Lamola, C. Fanciullacci, C. Procopio, C. Chisari, and A. Frisoli, "Novel mixed active hand exoskeleton and assistive arm device for intensive rehabilitative treatment for stroke patients," in *Converging Clinical and Engineering Research on Neurorehabilitation II: Proceedings of the 3rd International Conference on NeuroRehabilitation (ICNR2016), October 18-21, 2016, Segovia, Spain*, Springer, 2017, pp. 525–529.

- 9 **M. Barsotti**, E. Sotgiu, D. Leonardis, M. Sarac, G. Sgherri, G. Lamola, F. Chiara, C. Procopio, C. Chisari, and A. Frisoli, "A novel approach for upper limb robotic rehabilitation for stroke patients," in *Haptics: Perception, Devices, Control, and Applications: 10th International Conference, EuroHaptics 2016, London, UK, July 4-7, 2016, Proceedings, Part II 10*, Springer, 2016, pp. 459–469.
- 10 **M. Barsotti**, D. Leonardis, C. Loconsole, M. Solazzi, E. Sotgiu, C. Procopio, C. Chisari, M. Bergamasco, and A. Frisoli, "A full upper limb robotic exoskeleton for reaching and grasping rehabilitation triggered by mi-bci," in *2015 IEEE international conference on rehabilitation robotics (ICORR)*, IEEE, 2015, pp. 49–54.
- 11 D. Buongiorno, **M. Barsotti**, E. Sotgiu, C. Loconsole, M. Solazzi, V. Bevilacqua, and A. Frisoli, "A neuromusculoskeletal model of the human upper limb for a myoelectric exoskeleton control using a reduced number of muscles," in *2015 IEEE World Haptics Conference (WHC)*, IEEE, 2015, pp. 273–279.
- 12 C. Lorenzini, C. Faita, **M. Barsotti**, M. Carrozzino, F. Tecchia, and M. Bergamasco, "Aditho—a serious game for training and evaluating medical ethics skills," in *Entertainment Computing-ICEC 2015: 14th International Conference, ICEC 2015, Trondheim, Norway, September 29-October 2, 2015, Proceedings 14*, Springer, 2015, pp. 59–71.
- 13 V. Bevilacqua, G. Tattoli, D. Buongiorno, C. Loconsole, D. Leonardis, **M. Barsotti**, A. Frisoli, and M. Bergamasco, "A novel bci-ssvp based approach for control of walking in virtual environment using a convolutional neural network," in *2014 international joint conference on neural networks (IJCNN)*, IEEE, 2014, pp. 4121–4128.
- 14 E. Ruffaldi, **M. Barsotti**, D. Leonardis, G. Bassani, A. Frisoli, and M. Bergamasco, "Evaluating virtual embodiment with the alex exoskeleton," in *Haptics: Neuroscience, Devices, Modeling, and Applications: 9th International Conference, EuroHaptics 2014, Versailles, France, June 24-26, 2014, Proceedings, Part I 9*, Springer, 2014, pp. 133–140.
- 15 C. Loconsole, D. Leonardis, **M. Barsotti**, M. Solazzi, A. Frisoli, M. Bergamasco, M. Troncossi, M. M. Foumashi, C. Mazzotti, and V. P. Castelli, "An emg-based robotic hand exoskeleton for bilateral training of grasp," in *2013 World Haptics Conference (WHC)*, IEEE, 2013, pp. 537–542.
- 16 D. Leonardis, A. Frisoli, **M. Barsotti**, N. Vanello, and M. Bergamasco, "A comparison of algorithms for motor imagery for bci under different sensory feedback conditions," in *2012 4th IEEE RAS & EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob)*, IEEE, 2012, pp. 1010–1015.