



Claudio CASTELLINI, PH.D.

Résumé

BIOGRAPHICAL SKETCH I am a researcher in medical robotics, focussing on rehabilitation and assistive robotics, human-machine interfaces and interaction and applied machine learning.

In 1998 I obtained a degree in Electronic (Biomedical) Engineerings from the University of Genoa, then in 2005 a Ph.D. in Artificial Intelligence (Mathematical Logic) from the School of Informatics of the University of Edinburgh. I then turned my attention to robotics for the disabled, and spent 4.5 years as a post-doctoral fellow at the Advanced Robotics Laboratory of the University of Genoa.

In 2009, then, I landed at the German Aerospace Center where, as of now, I am a senior researcher at the Institute of Robotics and Mechatronics. Finally (so far), in 2021 I have been appointed full professor of Assistive Intelligent Robotics at the Friedrich-Alexander University of Erlangen-Nuremberg, Germany.

As of now, I have (co)authored some 150 scientific papers, I am involved in a few research projects and I have served, or am currently serving, for some international editorial boards and committees.

PERSONAL INFO

FULL NAME Claudio CASTELLINI
NATIONALITIES Italy (by birth) and Germany (acquired in 2017)
BIRTH July 19th, 1972, Genoa, Italy
GENDER & STATUS male, single (never married, no children)
WORK CONTACT Assistive Intelligent Robotics Lab (AIROB, www.airob.tf.fau.de)
Werner-von-Siemens-Strasse 61, room 3.15
91052 Erlangen, Germany
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ACADEMIC PROFILES AND METRICS

ORCID www.orcid.org/0000-0002-7346-2180
GOOGLE scholar.google.de/citations?user=barrdn0AAAAJ
h-index: 38, 6411 citations
SCOPUS www.scopus.com/authid/detail.uri?authorId=8957778700
h-index: 34, 4062 citations
WEB OF SCIENCE www.webofscience.com/wos/author/record/1295397
h-index: 31, 3293 citations
SEMANTIC SCHOLAR www.semanticscholar.org/author/Claudio-Castellini/1743399
h-index: 37, 5110 citations, 326 of which “highly influential”
RESEARCHGATE www.researchgate.net/profile/Claudio_Castellini
h-index: 37, 5541 citations



ORCID QR CODE

RESEARCH INTERESTS

MAIN INTERESTS Human-machine interfaces and human-machine interaction, especially in the context of assistive and rehabilitation robotics

Assistive robotics, rehabilitation robotics and virtual reality, focussing on prosthetics, stroke rehabilitation and rehabilitation of spinal cord injuries

Functional assessment and outcome; usability; user-centred design

Embodiment, co-adaptation, psychology of HRI with particular focus on constructivism and design science

Surface electromyography, tactile, force, ultrasound and pressure sensing

Applied and theoretical machine learning

SECONDARY INTERESTS Speech recognition; formal methods; Boolean satisfiability; automated verification of security protocols and programs; planning; temporal logics; combinatorial optimisation.

CAREER HISTORY

CURRENT APPOINTMENT (2021 TO DATE) Full professor of assistive robotics at the **Department of Artificial Intelligence in Biomedical Engineering (AIBE) Friedrich-Alexander-Universität Erlangen-Nürnberg Erlangen, Germany**
www.airob.tf.fau.de

Focussing on theoretical and applied control of assistive and rehabilitation robots, with strong ties to clinics and healthcare providers both in the public and private sector. (Tenured permanent position, full-time.)

CURRENT APPOINTMENT (2009 TO DATE) Senior researcher at the **Institute of Robotics and Mechatronics German Aerospace Center (DLR) Oberpfaffenhofen, Germany**
<https://www.dlr.de/rm/en/desktopdefault.aspx/tabid-8017>

Senior researcher in machine learning applied to assistive and rehabilitation robotics, especially human-machine interfaces for advanced upper-limb prosthetics, directly reporting to the Head of Department and Head of Institute. (Internally funded permanent position, part-time 20%.)

2005 – 2009 Post-doctoral researcher at the **Advanced Robotics Laboratory University of Genoa, Italy**

Researcher in machine learning applied to computer vision, gaze tracking, biological signals, teleoperation, natural language processing.

Supervisors: Prof. Giulio SANDINI, Prof. Giorgio METTA

1999 – 2005 Ph.D. student at the **Department of Artificial Intelligence, School of Informatics University of Edinburgh, Scotland**
www.informatics.ed.ac.uk

Researcher in automated theorem proving, especially in temporal logics; application to formal verification of complex, infinite-state systems.

Supervisor: Dr. Alan SMAILL

2003 – 2004 Research associate at the **Institute of Cognitive Sciences and Technologies CNR – Italian National Research Council, Rome, Italy**

Researcher in planning via Boolean satisfiability.

Supervisor: Dr. Amedeo CESTA

2001 – 2004 Research associate at the
Artificial Intelligence Laboratory
University of Genoa, Italy

Researcher in automated theorem proving, especially temporal logics; application to formal verification of complex, infinite-state systems.

Supervisors: Prof. Enrico GIUNCHIGLIA, Prof. Alessandro ARMANDO

ACADEMIC MILESTONES

- 2022 Italian national scientific qualification as full professor of Bioengineering (*Abilitazione Scientifica Nazionale* per professore di I fascia s.s.d. 09/G2 “Bioingegneria” ex settori ING-INF/06 “Bioingegneria elettronica e informatica” e ING-IND/34 “Bioingegneria industriale”)
Valid until June, 2033.
- 2021 Successfully attended the course *Psychology of Interaction Design: the ultimate guide* issued by the Interaction Design Foundation.
Distinction: top 10% in class. www.interaction-design.org/claudio-castellini
- 2018 Italian national scientific qualification as associate professor of Bioengineering (*Abilitazione Scientifica Nazionale* per professore di II fascia s.s.d. 09/G2 “Bioingegneria” ex settori ING-INF/06 “Bioingegneria elettronica e informatica” e ING-IND/34 “Bioingegneria industriale”)
Valid until April, 2029.
- 2005 Ph.D. in Artificial Intelligence at the School of Informatics, Department of Artificial Intelligence, University of Edinburgh, Scotland.
Accepted with minor revision.
- 1999 Professional qualification exam (*Esame di stato per ingegneri*) at the University of Genoa, Italy.
Final mark: 105/110.
- 1998 *Laurea* (M.Sc. equivalent) in Electronic Engineering at the University of Genoa, Italy.
Final mark: 110/110.
- 1991 High School diploma at *Martin Luther King* Liceo Scientifico in Genoa, Italy.
Final mark: 58/60.

RESEARCH PROJECTS

- CURRENT** *HIT-Reha – Human Impedance control for Tailored Rehabilitation.* 3yrs, DFG – Deutsche Forschungsgemeinschaft, project leader.
gepris.dfg.de/gepris/projekt/505327336?language=en
- IntelliMan – AI-Powered Manipulation System for Advanced Robotic Service, Manufacturing and Prosthetics.* 3,5yrs, EU – Horizon Europe, principal investigator.
www.intelliman-project.eu
- PAST** *VVITA – Validation of the Virtual Therapy Arm.* 3yrs, HGF – Helmholtz-Gemeinschaft Deutscher Forschungszentren, project leader.
www.helmholtz.de
- Deep-Hand – Deep sensing + deep learning for myocontrol of the upper limb.* 2yrs, DFG – Deutsche Forschungsgemeinschaft, project leader.
www.dfg.de
- An.Dy. – Advancing anticipatory behaviors in dyadic human-robot collaboration* 3yrs, EU H2020, co-investigator.
- Tact-Hand – Improving control of prosthetic hands using tactile sensors and*

realistic machine learning. 3yrs, DFG – Deutsche Forschungsgemeinschaft, principal investigator, project leader.

VITA – Virtual Therapy Arm. 2yrs, DLR Technology & Marketing dept., project leader.

Ninapro – Non-invasive adaptive prosthetics. 3yrs, development of novel control methods for mechanical hands, based upon surface electromyography, co-investigator.

THE – The Hand Embodied An investigation on the hand, its physiology, its use, its models, EU Framework Programme 7, co-investigator.

INTERNATIONAL VISITS

- 2023 Two weeks at the University of Jember, Indonesia.
Hosted by Dr. Khairul ANAM.
- 2018 One week at the BLINC Lab, University of Alberta at Edmonton, Canada.
Hosted by Prof. Dr. Jacqueline HÉBERT and Prof. Patrick PILARSKI.
- 2008 Two months at the NEUROLab, Faculty of Medicine, University of Ferrara, Italy.
Investigation on the usage of audio-motor data in automatic speech recognition.
Supervisor: Prof. Luciano FADIGA.
- 2007 Two and a half months at the DLR (German Aerospace Center), Germany.
Investigation and practical implementation of a control system for a mechanical hand using surface electromyography.
Supervisor: Dr. Patrick VAN DER SMAGT.
- 2001 Two weeks at Stanford University. Investigation of the temporal reasoning techniques employed in the STeP system.
Supervisors: Prof. Zohar MANNA, Dr. Henny SIPMA.

AWARDS

- 2018 *Best Paper Award in Prosthetics* at ICNR 2018, International Conference on Neurorehabilitation, Pisa, Italy. Co-authored with Gauravkumar PATEL, Strahinja DOŠEN, Janne HAHNE and Dario FARINA.
- 2017 Runner-up prize (as a supervisor of Mr. Eduardo RUIZ RAMÍREZ) of the *Best M.Sc. thesis in Artificial Intelligence*, Catalan Association for Artificial Intelligence (ACIA).
- 2016 Winner (as a supervisor of Ms. Carla VIEGAS) of the *Best student project award in the area of Pattern Recognition and Medical Engineering*, University of Erlangen-Nürnberg.
- 2015 *DLR Idea Award Leben 4.0* for innovative ideas in rehabilitation and assistive robotics. Co-authored with Zoltán-Csaba MÁRTON, Christian NISSLER, Markus NOWAK and Ingo KOSSYK
- 2014 Finalist for Best Video Contribution at ICRA 2014, *IEEE International Conference on Advanced Robotics*, Chicago, USA.
- 2009 Diploma of merit for the project proposal *NINAPRO – Non-invasive adaptive hand prosthetics*, awarded by SIRI (Italian Society of Automation and Robotics).
- 2007 One-year research project *Machine learning for intelligent prosthetics*. Awarded by the CARIGE Foundation (Bank of Genoa and the Ligurian Riviera).
- 2005 *Best Italian Ph.D. Thesis of the year* in Artificial Intelligence. Awarded by AIIA (Artificial Intelligence Italian Association).
- 2001 Two-yearly studentship on the project *ROBOCARE*. Awarded by CNR (Italian Research Council).

INVITED TALKS

- 2022 *If I can do it, you can do it! Interactive learning as the key to reliable intent detection.*
Keynote speech at IEEE MetroInd 2022, Trento.
www.metroind40iot.org
Distinguished seminars in robotics, systems and control, ETHZ, Zürich, 2022.
www.msrl.ethz.ch/education/Distinguished_Seminar_RSC.html
- 2019/2020 *Human-machine {interaction, interfaces}: it isn't about machine learning.* A tutorial given at ICECS 2019 (Genoa, Italy), at the NeuTouch 2020 Summer School and at the School of Informatics of the University of Edinburgh.
www.neutouch.eu/neuschool2020
- 2018 *Interactive learning: a key component of the HRI of the future.* University of Alberta, Canada; University of Bologna, Italy; ICNR – International Conference on NeuroRehabilitation, Pisa, Italy.
- 2016 *Assessing the functionality of upper-limb amputees while using pattern matching and interactive learning.* RO-MAN Workshop *Human-Oriented Approaches for Assistive and Rehabilitation Robotics*, New York, USA.

A prototype wearable EMG/pressure sensing device: towards multi-modal prosthetic myocontrol. MYOSENS Workshop *Smart, affordable prosthetics*, Göttingen, Germany.
- 2015 *Incremental learning: towards the interaction between a prosthesis and a patient.* ICORR 2015, Singapore.
- 2014 *Adding incrementality to simultaneous and proportional control: from training a machine to interacting with a human.* DEMOVE Symposium, Göttingen, Germany.

Ultrasound imaging as a new interface between man and machines for rehabilitation. At OT-World 2014, Leipzig, Germany.
- 2007 *Learning when to grasp.* At CLEA 2007, a workshop within ICRA 2007.

ACADEMIC DUTIES

- FROM 2023 ON Associate Editor of the *IEEE Transactions on Neural Systems and Rehabilitation Engineering*.
www.embs.org/tnsre/associate-editors/
- 2020-2023 Associate Editor of *Frontiers in Neurorobotics*.
www.frontiersin.org/journals/neurorobotics

Associate Editor of *Frontiers in Psychology (Performance Science)*.
www.frontiersin.org/journals/psychology/sections/performance-science
- 2023 Associate Editor of ICORR 2023.
www.rehabweek.org
- 2022 Guest Associate Editor of *Frontiers in Neuroscience*, research topic *Current Trends in Deep Learning for Movement Analysis and Prostheses Control*.
<https://www.frontiersin.org/research-topics/17861/current-trends-in-deep-learning-for-movement-analysis-and-prostheses-control>

Guest Associate Editor of *Frontiers in Rehabilitation Sciences*, research topic *Human-Centered Solutions and Synergies across Robotic and Digital Systems for Rehabilitation*.
www.frontiersin.org/research-topics/26231/human-centered-solutions-and-synergies-across-robotic-and-digital-systems-for-rehabilitation
- Associate Editor of ICORR 2022.
www.rehabweek.org
- 2020 Editor of the 8th IEEE RAS/EMBS *International Conference on Biomedical*

Robotics and Biomechatronics (BioRob 2020).

www.biorob2020nyc.org

Guest Associate Editor of *Frontiers in Neurorobotics*, research topic *Embodiment and Co-Adaptation through Human-Machine Interfaces: at the border of Robotics, Neuroscience and Psychology*.

www.frontiersin.org/research-topics/12275/embodiment-and-co-adaptation-through-human-machine-interfaces-at-the-border-of-robotics-neuroscience

Project reviewer for the ETH Zürich.

2019 Associate Editor of ICORR 2019.

www.icorr2019.org

2018 Organiser of *The intelligence of touch*, a workshop associated to IROS 2018, Madrid, Spain. Co-organisation with Philipp BECKERLE and Tamim ASFOUR.

www.inttouch.wordpress.com

2017 Associate Editor of ICORR 2017.

Organisation of the 3rd workshop on *Present and future of non-invasive PNS-Machine Interfaces* – a satellite event of AOPA World Congress 2017, *American Orthotics and Prosthetics Association*, Las Vegas, USA.

2016 Guest Associate Editor for *Frontiers in Neurorobotics*, research topic *Peripheral Nervous System-Machine Interfaces (PNS-MI)*.

www.frontiersin.org/research-topics/4614/peripheral-nervous-system-machine-interfaces-pns-mi

Project reviewer for the Dutch Technology Foundation STW.

2015 Organisation of the 2nd workshop on *Present and future of non-invasive PNS-Machine Interfaces* – a satellite event of ICORR 2015, *International Conference on Rehabilitation Robotics*, Singapore.

2014 Co-organisation of the symposium *Steuerungsschnittstelle in der Armprothetik: Stand der Technik und über den Stand der Technik hinaus!* (Control interfaces in arm prosthetics: state of the art and beyond!), in OT-World 2014.

Project reviewer for the European Research Council (registered at the European Commission as an *External Expert*).

FROM 2013 ON Chair of the *PNS-Machine Interfaces* community.

2013 Organisation of the 1st workshop on *Present and future of non-invasive PNS-Machine Interfaces* – a satellite event of ICORR 2013, *International Conference on Rehabilitation Robotics*.

2012 Project reviewer for the Canadian Institute of Health.

2009 Member of the program committee of ICAR 2009, *International Conference on Advanced Robotics*.

2008-2010 Member of the editorial board of the *Open Artificial Intelligence Journal*.

Member of the IEEE RAS *Technical Committee on Robot Learning*.

SINCE 2001 Reviewer for several conferences and journals, among which *Advanced Robotics*, the *Journal of Physiology (Paris)*, the *Journal of Neuroengineering and Rehabilitation*, several IEEE Transactions, the *International Journal of Robotics Research*, ICRA, IROS and ICORR.

TEACHING DUTIES

SINCE 2021 Managing courses, seminars and practicals for a total of ~24 hours/wk, 40 ECTS at the M.Sc. level.

SUPERVISIONS

POSTGRADUATES Dr. Sabine THÜRAUF (postdoctoral fellow @ FAU)
Ms. Mathilde CONNAN (Ph.D. candidate @ TUM/DLR)
Mr. Markus NOWAK (Ph.D. candidate @ TUM/DLR)
Mr. Andrea GIGLI (Ph.D. candidate @ FAU/DLR)
Mr. Marco CANEPA (Ph.D. candidate @ IIT)
Mr. Marc-Anton SCHEIDL (Ph.D. candidate @ FAU)
Mr. Marek SIEROTOWICZ (Ph.D. candidate @ FAU)
Mr. Karan SHARMA (Ph.D. candidate @ FAU)
Mr. Werner FRIEDL (Ph.D. candidate @ FAU/DLR)
Mr. Fabio Andre EGLE (Ph.D. candidate @ FAU)
Mr. Konrad FRÜND (researcher @ DLR)

UNDERGRADUATES About 5 a year since 2009.

ALUMNI Dr. Simone RANALDI, Dr. Gauravkumar PATEL, Dr. Roberto MEATTINI, Dr. David SIERRA GONZÁLEZ.

PATENTS

- 2021** Donato Brusamento, Benjamin Schirrmeyer, Mathilde Connan, Jonas Bornmann, José González-Vargas and Claudio Castellini, *Verfahren zum Kontrollieren eines Exoskeletts, Exoskelett und Computerprogrammprodukt* ("Procedure to control an exoskeleton, exoskeleton and software program") Pending at the German Patent Office, ID: DE10 2021 116 202 5, <https://register.dpma.de/DPMAREgister/pat/register?AKZ=1020211162025>
- 2020** Ingo Kossyk, Markus Nowak, Christian Nißler, Claudio Castellini and Zoltán-Csaba Márton, *Virtual Reality-System und Verfahren zum Betreiben eines solchen* Issued by the German Patent Office, ID: DE10 2016 205 849 5, <https://register.dpma.de/DPMAREgister/pat/register?AKZ=1020162058495>

PUBLICATIONS

- BOOKS (AS EDITOR)** 1. Winger, M., Artemiadis, P., Castellini, C. and Pilarski, P., (eds.) *Peripheral Nervous System-Machine Interfaces (PNS-MI)*, Frontiers Media SA, 2018.
- BOOK CHAPTERS** 1. Castellini, C. "Chapter 20 - Design principles of a light, wearable upper limb interface for prosthetics and teleoperation", in Rosen, J. and Ferguson, P., ed., 'Wearable robotics: systems and applications', Elsevier, 2020, pp. 377--391.
2. Castellini, C. "Chapter 19 - Upper limb active prosthetic systems - Overview", in Rosen, J. and Ferguson, P., ed., 'Wearable robotics: systems and applications', Elsevier, 2020, pp. 365--376.
3. Castellini, C. "Incremental learning of muscle synergies: from calibration to interaction", in Bianchi, M. and Moscatelli, A., ed., 'Human and robot hands: sensorimotor synergies to bridge the gap between neuroscience and robotics', Springer International Publishing, 2016, pp. 171--193.
4. Castellini, C. "State of the art and perspectives of ultrasound imaging as a Human-Machine Interface", in Artemiadis, P., ed., 'Neuro-Robotics: from Brain-Machine Interfaces to rehabilitation robotics', Springer International Publishing, 2014, pp. 37--58.
- IN PEER-REVIEWED JOURNALS** 1. Sierotowicz, M., Lotti, N., Nell, L., Missiroli, F., Alicea, R., Zhang, X., Xiloyannis, M., Rupp, R., Papp, E., Krzywinski, J., Castellini, C. and Masia, L. "EMG-driven machine learning control of a soft glove for grasping assistance and rehabilitation," *IEEE Robotics and Automation Letters* (7:2), 2022, pp. 1566--1573.
2. Bettoni, M. C. and Castellini, C. "Interaction in assistive robotics: a radical constructivist design framework," *Frontiers in Neurorobotics* (15), 2021, pp. 67.
3. Connan, M., Sierotowicz, M., Henze, B., Porges, O., Albu-Schäffer, A., Garzon, M. A. R. and Castellini, C. "Learning to teleoperate an upper-limb assistive humanoid robot for bimanual daily-living tasks," *Biomedical Physics & Engineering Express* (8:1), 2021, pp. 015022.
4. Vecchio, A. D., Castellini, C. and Beckerle, P. "Peripheral neuroergonomics - An elegant way to improve Human-Robot Interaction?," *Frontiers in Neurorobotics* (15), 2021, pp. 117.
5. Connan, M., Kõiva, R. and Castellini, C. "Online natural myocontrol of combined hand and wrist actions using tactile myography and the biomechanics of grasping," *Frontiers in Neurorobotics* (14:11), 2020.
6. Gigli, A., Gijsberts, A. and Castellini, C. "The merits of dynamic data acquisition for realistic myocontrol," *Frontiers in Bioengineering and Biotechnology* (361:8), 2020.
7. Gigli, A., Brusamento, D., Meattini, R., Melchiorri, C. and Castellini, C. "Feedback-aided data acquisition improves myoelectric control of a prosthetic hand," *Journal of Neural Engineering* (17:5), 2020, pp. 056047.
8. Nowak, M., Eiband, T., Ramhrez, E. R. and Castellini, C. "Action interference in simultaneous and

- proportional myocontrol: comparing force- and electromyography," *Journal of Neural Engineering* (17:2), 2020, pp. 026011.
9. Sierotowicz, M., Connan, M. and Castellini, C. "Human-in-the-loop assessment of an ultralight, low-cost body posture tracking device," *MDPI Sensors* (20:3), 2020, pp. 890.
 10. Guidotti, D., Leofante, F., Tacchella, A. and Castellini, C. "Improving reliability of myocontrol using formal verification," *IEEE Transactions on Neural Systems and Rehabilitation Engineering* (27:4), 2019, pp. 564--571.
 11. Meattini, R., Nowak, M., Melchiorri, C. and Castellini, C. "Automated instability detection for interactive myocontrol of prosthetic hands," *Frontiers in Neurorobotics* (13:68), 2019.
 12. Nissler, C., Nowak, M., Connan, M., Büttner, S., Vogel, J., Kossyk, I., Marton, Z.-C. and Castellini, C. "VITA - An everyday virtual reality setup for prosthetics and upper-limb rehabilitation," *Journal of Neural Engineering* (16:2), 2019.
 13. Sharma, K., Castellini, C., van den Broek, E. L., Albu-Schäffer, A. and Schwenker, F. "A dataset of continuous affect annotations and physiological signals for emotion analysis," *Scientific Data* (6:1), 2019, pp. 196.
 14. Sharma, K., Wagner, M., Castellini, C., van den Broek, E. L., Stulp, F. and Schwenker, F. "A functional data analysis approach for continuous 2-D emotion annotations," *Web Intelligence* (17:1), 2019, pp. 41--52.
 15. Beckerle, P., Bianchi, M., Castellini, C. and Salvietti, G. "Mechatronic designs for a robotic hand to explore human body experience and sensory-motor skills: a Delphi study," *Advanced Robotics* (32:12), 2018, pp. 670--680.
 16. Beckerle, P., Kõiva, R., Kirchner, E. A., Bekrater-Bodmann, R., Dosen, S., Christ, O., Abbink, D. A., Castellini, C. and Lenggenger, B. "Feel-good robotics: requirements on touch for embodiment in assistive robotics," *Frontiers in Neurorobotics* (12:84), 2018.
 17. Beckerle, P., Castellini, C. and Lenggenger, B. "Robotic interfaces for cognitive psychology and embodiment research: a research roadmap," *Wiley Interdisciplinary Reviews - Cognitive Science* (), 2018, pp. e1486.
 18. Castellini, C., Kõiva, R., Pasluosta, C., Viegas, C. and Eskofier, B. M. "Tactile myography: an off-line assessment on able-bodied subjects and one upper-limb amputee," *MDPI Technologies* (6:2), 2018, pp. 38.
 19. Nowak, M., Castellini, C. and Massironi, C. "Applying Radical Constructivism to machine learning: a pilot study in assistive robotics," *Constructivist Foundations* (13:2), 2018, pp. 250--262.
 20. Patel, G., Castellini, C., Hahne, J., Farina, D. and Dosen, S. "A classification method for myoelectric control of hand prostheses inspired by muscle coordination," *IEEE Transactions on Neural Systems and Rehabilitation Engineering* (26:9), 2018, pp. 1745--1755.
 21. Beckerle, P., Salvietti, G., Bnal, R., Prattichizzo, D., Rossi, S., Castellini, C., Hirche, S., Endo, S., Amor, H. B., Ciocarlie, M., Mastrogiovanni, F., Argall, B. D. and Bianchi, M. "A Human-Robot Interaction perspective on assistive and rehabilitation robotics," *Frontiers in Neurorobotics* (11:24), 2017.
 22. Jaquier, N., Connan, M., Castellini, C. and Calinon, S. "Combining electro- and tactile myography to improve hand and wrist activity detection in prostheses," *MDPI Technologies* (5:4), 2017, pp. 64.
 23. Patel, G., Nowak, M. and Castellini, C. "Exploiting knowledge composition to improve real-life hand prosthetic control," *IEEE Transactions on Neural Systems and Rehabilitation Engineering* (25:7), 2017, pp. 967--975.
 24. Patel, G. K., Hahne, J. M., Castellini, C., Farina, D. and Dosen, S. "Context-dependent adaptation improves robustness of myoelectric control for upper-limb prostheses," *Journal of Neural Engineering* (14:5), 2017, pp. 056016.
 25. Sharma, K., Castellini, C., Stulp, F. and van den Broek, E. L. "Continuous, real-time emotion annotation: a novel joystick-based analysis framework," *IEEE Transactions on Affective Computing* (11:1), 2017, pp. 78--84.
 26. Strazzulla, I., Nowak, M., Controzzi, M., Cipriani, C. and Castellini, C. "Online bimanual manipulation using surface electromyography and incremental learning," *IEEE Transactions on Neural Systems and Rehabilitation Engineering* (25:3), 2017, pp. 227--234.
 27. Winger, M., Artemiadis, P., Castellini, C. and Pilarski, P. M. "Editorial: Peripheral Nervous System-Machine Interfaces (PNS-MI)," *Frontiers in Neurorobotics* (11:54), 2017.
 28. Atzori, M., Gijsberts, A., Castellini, C., Caputo, B., Hager, A.-G. M., Elsig, S., Giatsidis, G., Bassetto, F. and Müller, H. "Clinical parameter effect on the capability to control myoelectric robotic prosthetic hands," *Journal of Rehabilitation Research and Development* (53:3), 2016, pp. 345--358.
 29. Connan, M., Ramhrez, E. R., Vodermayr, B. and Castellini, C. "Assessment of a wearable force- and electromyography device and comparison of the related signals for myocontrol," *Frontiers in Neurorobotics* (10:17), 2016.
 30. Nissler, C., Mouriki, N. and Castellini, C. "Optical myography: detecting finger movements by looking at the forearm," *Frontiers in Neurorobotics* (10:3), 2016.
 31. Nowak, M. and Castellini, C. "The LET procedure for prosthetic myocontrol: towards multi-DOF control using single-DOF activations," *PLoS ONE* (11:9), 2016, pp. 1--20.
 32. Patel, G. K., Dosen, S., Castellini, C. and Farina, D. "Multichannel electro-tactile feedback for simultaneous and proportional myoelectric control," *Journal of Neural Engineering* (13:5), 2016, pp. 056015.
 33. Santello, M., Bianchi, M., Gabiccini, M., Ricciardi, E., Salvietti, G., Prattichizzo, D., Ernst, M., Moscatelli, A., Jürntell, H., Kappers, A. M. L., Kyriakopoulos, K., Albu-Schäffer, A., Castellini, C. and Bicchi, A. "Hand synergies: integration of robotics and neuroscience for understanding the control of biological and artificial hands," *Physics of Life Reviews* (17), 2016, pp. 1--23.
 34. Santello, M., Bianchi, M., Gabiccini, M., Ricciardi, E., Salvietti, G., Prattichizzo, D., Ernst, M., Moscatelli, A., Jürntell, H., Kappers, A. M. L., Kyriakopoulos, K., Albu-Schäffer, A., Castellini, C. and Bicchi, A. "Towards a synergy framework across neuroscience and robotics: lessons learned and

open questions. Reply to comments on: "Hand synergies: integration of robotics and neuroscience for understanding the control of biological and artificial hands", *Physics of Life Reviews* (17), 2016, pp. 54–60.

35. Atzori, M., Gijsberts, A., Kuzborskij, I., Elsig, S., Hager, A.-G. M., Deriaz, O., Castellini, C., Müller, H. and Caputo, B. "Characterization of a benchmark database for myoelectric movement classification," *IEEE Transactions on Neural Systems and Rehabilitation Engineering* (23:1), 2015, pp. 73–83.
36. Castellini, C., Bongers, R. M., Nowak, M. and van der Sluis, C. K. "Upper-limb prosthetic myocontrol: two recommendations," *Frontiers in Neuroscience* (9:496), 2015.
37. Atzori, M., Gijsberts, A., Castellini, C., Caputo, B., Hager, A.-G. M., Elsig, S., Giatsidis, G., Bassetto, F. and Müller, H. "Electromyography data for non-invasive naturally-controlled robotic hand prostheses," *Scientific Data* (1), 2014, pp. 140053.
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