



2017
SCHOOL & SYMPOSIUM ON ADVANCED
NEUROREHABILITATION

SCHOOL AND SYMPOSIUM ON ADVANCED
NEUROREHABILITATION (SSNR2017)

Proceedings

*September 17-22, 2017
Baiona (Spain)*



Imperial College
London

Table of Contents

	<i>Page</i>
Modeling human behavior through functional analysis: applications in assistive robotics and HRI <i>Giuseppe Averta, Matteo Bianchi, and Antonio Bicchi</i>	4
Neurophysiological constraints of control parameters for a brain computer interface system to support post-stroke motor rehabilitation <i>Emma Colamarino, Floriana Pichiorri, Donatella Mattia and Febo Cincotti</i>	6
Factors Influencing Premotor Potentials and how their Combination Can Increase this Potentials <i>O. Herrero Giménez, J.L. Pons</i>	8
INPUT – H2020 EU project to advance hand prosthetic control <i>Sebastian Amsüss, Markus Schachinger, and Michael F. Russold</i>	10
Determine socket shift in trans-radial amputees using ultrasound and 3 D motion capture <i>Unglaube F., Pobatschnig B., Kranzl A.</i>	12
Machine Learning for Advanced Electromyographic Prosthesis Control <i>Michael Wand, Klaus Greff, Jürgen Schmidhube</i>	14
Preliminary study on the validation of Leap Motion Controller in tetraplegic patients <i>A. De los Reyes-Guzmán, V. Lozano-Berrio, M. Salas-Monedero and A. Gil-Agudo</i>	16
Evidence for altered upper limb muscle synergies in cervical spinal cord injury patients <i>E. López-Dolado, A. De los Reyes-Guzmán, D. Torricelli, J. L. Pons, A. Gil-Agudo</i>	18
Wearable Haptics: Towards a Novel Paradigm of Human-Robot Communication for Assistive and Rehabilitation Robotics <i>Simone Fani, Simone Ciotti, Manuel G. Catalano, and Matteo Bianchi</i>	20
Influence of myoelectric control on finger muscle activation patterns	

<i>Sigrid S.G Dupan, Ivan Vujaklija, Janne M. Hahne, Dick F. Stegeman, Bernhard Graimann, Dario Farina, and Strahinja Dosen.....</i>	<i>22</i>
Effects of Wrist Robot-assisted Rehabilitation on Proximal Upper Limb Segments Recovery in Subacute Stroke Patients: A Preliminary Results	
<i>Vi-Do Tran, Paolo Dario, and Stefano Mazzoleni.....</i>	<i>24</i>
EMG based control for elbow joint SMA exoskeleton	
<i>Dorin Copaci, David Serrano, Luis Moreno and Dolores Blanco.....</i>	<i>26</i>
Natural management of assistive exoskeleton with crutches	
<i>M. Irene de Orbe, Luis J. Barrios, José L. Pons.....</i>	<i>28</i>
Brain machine interface and neuroprosthesis for lower limb functional rehabilitation: a corticospinal pathway study in healthy volunteers	
<i>A. Martínez Expósito, F. Resquín Acosta, J. Ibañez Pereda, and J.L. Pons Rovira.....</i>	<i>30</i>
Robotic Platform including a Visual Paradigm to Promote Motor Learning	
<i>Guillermo Asín-Prieto, José E. González, José L. Pons and Juan C. Moreno.....</i>	<i>32</i>
Do activation & synergy of above knee amputees' intact leg change?	
<i>P. Mehryar, M. S. Shourijeh, T. Rezaeian, C. Crisp, N. Messenger, R. O'Connor, A. Dehghani-Sanij.....</i>	<i>34</i>
Characterizing the effects of soft tissues and physical interfaces in lower limb exoskeletons: a modeling approach	
<i>M.C. Sánchez-Villamañán, D. Torricelli, J. L. Pons.....</i>	<i>36</i>
Technology Assisted Neurorehabilitation as colaborative project	
<i>Natalia M Lopez , Elisa Perez , Ricardo Berjano, Valeria Rizo, Julieta Quiroga, Cristian Abelín, Emanuel Tello, Alejandro Rodrigo.....</i>	<i>38</i>
Transcranial Magnetic Stimulation as a tool for Memory Enhancement Research	
<i>A. San Agustín and Jose L. Pons.....</i>	<i>40</i>
A Plug-and-Train Robotic Kit for Hand Rehabilitation – Preliminary Design	
<i>Aravind Nehrujee, Sandeep Guguloth, Sujatha Srinivasan and Sivakumar Balasubramanian.....</i>	<i>42</i>