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Chapter

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Upper Limb Robot Assisted Rehabilitation Platform Combining Virtual Reality, Posture Estimation and Kinematic Indices

- D. Scorza
- , A. de Los Reyes
- , C. Cortés
- , A. Ardanza
- , A. Bertelsen
- , O. E. Ruiz
- , A. Gil
- , J. Flórez

Abstract

Upper limb rehabilitation is critical for patients affected by spinal cord injury (SCI). Currently, robotics and Virtual Reality (VR) have changed the way in which rehabilitation therapies are provided. However, a still unreached precondition for these systems is the precise and practical estimation of limb posture and an objective evaluation of patient's improvement. In this manuscript we present an upper limb rehabilitation platform combining VR, patient posture estimation and objective kinematic indices. This manuscript describes the software platform and criteria which integrate the modules of the system. We report preliminary results of the kinematic indices and platform usability by practitioners.

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- *D. Scorza* (7) (8)
- *A. de Los Reyes* (10)
- *C. Cortés* (7) (9)
- *A. Ardanza* (7)
- *A. Bertelsen* (7)
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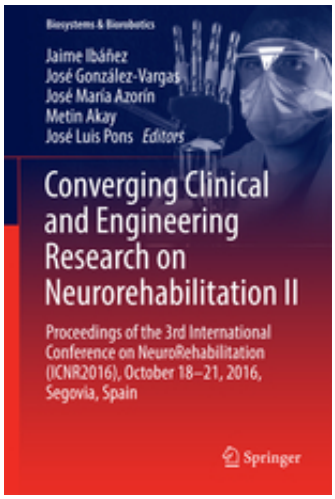
- *A. Gil* (10)
- *J. Flórez* (7)

Author Affiliations

- 7. e-Health and Biomedical Applications Department, Vicomtech-IK4, Donostia-San Sebastian, Spain
- 8. Neuroengineering and Medical Robotics Laboratory, Bioengineering Department, Politecnico di Milano, Milan, Italy
- 10. Biomechanics and Technical Aids Unit, National Hospital for Paraplegics, SESCAM, Toledo, Spain
- 9. Laboratorio de CAD CAM CAE, Universidad EAFIT, Medellín, Colombia



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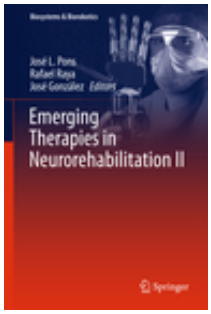

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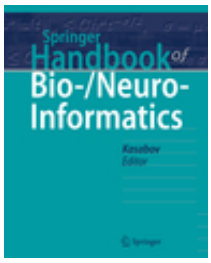

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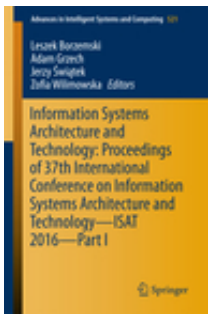

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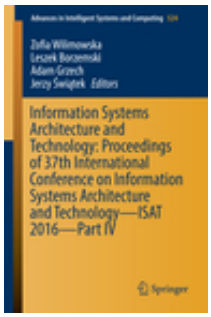

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