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Creating a Virtual Perception for Upper Limb Rehabilitation

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Abstract : This paper describes the development of a virtual-reality system ARWED, which will be used in physical rehabilitation of patients with reduced upper extremity mobility to increase limb Active Range of Motion (AROM). The ARWED system performs a symmetric reflection and real-time mapping of the patient’s healthy limb on to their most affected limb, tapping into the mirror neuron system and facilitating the initial learning phase. Using the ARWED, future experiments will test the extension of the action-observation priming effect linked to the mirror-neuron system on healthy subjects and then stroke patients.

Keywords : physical rehabilitation, mirror neuron, virtual reality, stroke therapy
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