

Development of a low-cost virtual reality-based smart glove for rehabilitation

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ABSTRACT

Presented is the third version of a low-cost bimanual rehabilitation system designed for in-home use by post stroke patients to improve hand and upper extremity function. Companion virtual reality software is still in development. The mechanical characterization and healthy subject (n=24) testing of the system sensors is described. These sensors include potentiometer bend sensors for finger motions and inertial measurement units (IMUs) for hand/arm position and orientation. The system accurately measures larger finger angles and all functional ranges of hand orientation (yaw, pitch, roll). Measurement of small finger angles and position of the hand in space requires further refinement.

Full papers will be published in the Conference Proceedings and will be available to delegates at the conference on Sept. 10.

Full papers will be released on-line in the ICDVRAT archive on March 15.