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Data Article

The mechanomyographic dataset of hand gestures harvested using an accelerometer and gyroscope

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ABSTRACT

Mechanomyography (MMG) datasets are crucial due to their unique characteristics, non-invasive techniques, fewer required sensors, improved signal-to-noise ratio, lightweight equipment, and no need for skin preparation, unlike some other techniques. This paper introduces a mechanomyography (MMG) signal dataset intended for application in human-computer interaction (HCI) research. The dataset is obtained from integrated sensor data, capturing mechanical signals from muscle activity via the accelerometer, augmented by the gyroscope for motion analysis. The dataset comprises 6-axis accelerometer and gyroscope data from 43 participants, ranging in age from 18 to 69 years, exhibiting a male-to-female distribution of 60 % to 40 % respectively. The dataset includes the following 11 gestures: clapping, coin flipping, finger snapping, fist making, horizontal wrist extension, index finger flicking, index thumb tapping, shooting, thumb up, wrist extension, and wrist flexion. A novel, assembled, and manufactured wearable system collected data from the main muscles that end at the wrist, just below the watch strap. These muscles include flexors and extensors, which work together to move the wrist and fingers when making the hand gestures listed above. Every participant completed a total of fifty repetitions for each of the eleven hand mo-

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