

Experimental Paradigm for EMG signals recordings

EMG Experimental Paradigm:

EMG signals will be recorded non-invasively from different healthy and right handed **volunteers according to the Edinburgh inventory test**. An FDA certified g.USBamp amplifier available at our lab NST will be used and all the recordings will be carried out in agreement with the Declaration of Helsinki. The subjects will be all normally limbed with no neurological or muscular disorders. A special experimental paradigm will be used to record **surface** EMG signals from both the elbow and forearm during several reach-to grasp movements as shown in figure 2. The subjects will be asked to reach the object and grasp it with a predefined grasp type keeping the same hand's orientation for all the grasp types as shown in figure 2.

Each session will last **48 minutes** and will comprise **6 runs** of **3 minutes** separated by short **breaks** of **5 minutes**. A 2-slot adhesive skin interface will be applied on each of the electrodes to firmly stick them to the skin. All participants will be given written informed consent prior to participating in the study. The collected data will only be used for research purposes. All data will be stored and processed locally (at NST) **anonymously as S1, S2, . . . , Sn**. All experiments will be conducted at our laboratory NST during different four time slots. The background noise level will be maintained around 37–39 decibels.

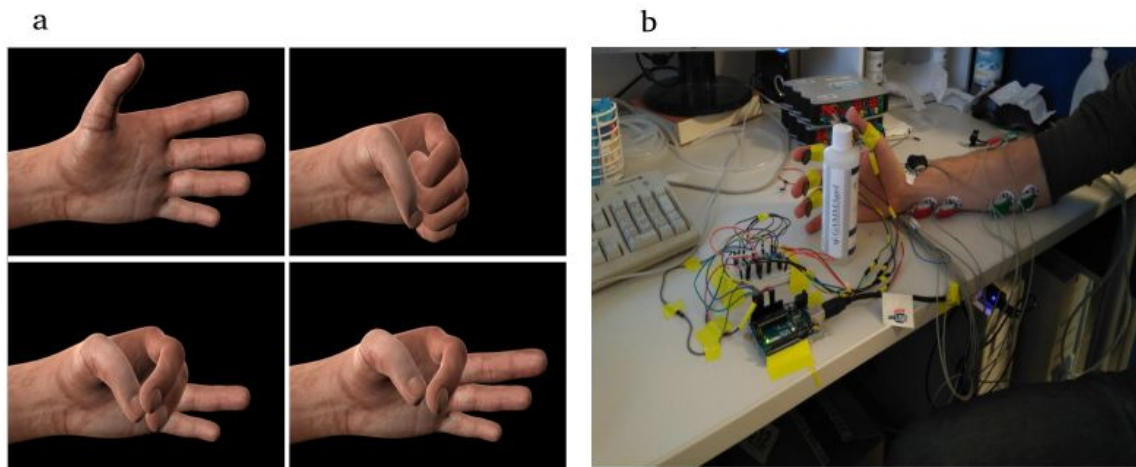


Figure 2: Experimental paradigm and recording setup of surface EMG signals