Data documentation

Data

This document describes shared data that is the basis for the following manuscript:
V. Gritsenko, E. Dailey, N. Kyle, M. Taylor, S. Whittacre, and A. K. Swisher (2015) Feasibility of Using Low-Cost Motion Capture for Automated Screening of Shoulder. PLOS ONE. In press.

The data consists of shoulder joint angles of people recovering from surgery performing several arm movements designed to test active and passive range of motion at the shoulder. The data values are maximal angles calculated from motion capture by the Kinect sensor (Microsoft) and manual goniometry.

All data is in the CSV file entitled Data.csv. Columns contain angular values in degrees starting from row 2, row 1 contains headers for all columns.

The header name contains the following meta information:

- ID
  - unique identifier of each motion repetition
- nROMg
  - shoulder angle values calculated by human experimenters using goniometry
- idTrialType
  - the type of performed movement identified by one of the following numbers
    - 4 - Abduction-Active Range of Motion (AA in the manuscript)
    - 5 - Abduction-Passive Range of Motion (AP in the manuscript)
    - 6 - Flexion-Active Range of Motion (FA in the manuscript)
    - 7 - Flexion-Passive Range of Motion (FP in the manuscript)
- idSubject
  - unique identifier of each subject, subject characteristics are described in metaSubject.csv
- nTrial
  - the sequential number of the repetition of each movement during the experiment, from 1 to 3
- sUnit
  - units of data, degrees
- nROM3d
  - shoulder angle values calculated by from Kinect motion capture and referred in the manuscript as a “body angle”
- nROMpr
  - shoulder angle values calculated by from Kinect motion capture and referred in the manuscript as a “projection angle”

Metadata

Headers in metaSubject.csv files

The file contains meta information about the experimental subjects. Row 1 contains column names, rows 2 to 21 contain descriptions for subjects as following:

- idSubject
  - IDs correspond to those in the data file, column idSubject
- sArm
  - site of surgery
    - r - right breast,
    - l - left breast
- sSurgeryType
  - type of surgery, mastectomy or lumpectomy
- sSurgeryDate
  - date of surgery
- sSessionDate
  - date of experiment

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