

Experiment 1 Documentation

Part of the Uk Data Service dataset titled “Interactions in Duo Improvisations”

This data release relates to the topic of interactions in music performance, carried out within an AHRC-funded project called *Interpersonal Entrainment in Musical Performance* [grant number AH/N00308X/1]. The data consists of annotations, movement and audio descriptors, and computational predictions of interactions in jazz duos. The jazz duos are represented by 15 pulsed (standard jazz) improvisations and 15 non-pulsed improvisations (free jazz) examples, which have been documented previously (Moran et al., 2015, <http://dx.doi.org/10.7488/ds/251>) and the videos have been released separately, see <http://datashare.is.ed.ac.uk/handle/10283/2840>. Here we release only the numerical data used in the evaluation of wavelet-based methods to estimate the interactive bouts within the performances.

Experiment 1: Extracted movement and annotation data from pulsed and non-pulsed duos

Experiment 1 data is contained in one ascii data file called `exp1_data.csv`, which contains 4 sources of data encapsulated into one large csv file (110,250 rows, 28 columns). The column headers and their meaning is given below.

1) Information and annotation descriptors

- Dataset *[string]*: Dataset (“Pulsed” or “Non-pulsed”).
- Video *[string]*: Filename referring to the original study (Moran et al., 2005, <http://dx.doi.org/10.7488/ds/251>), consisting of dataset (Standard or Free), duo number (two digits), and a take number (see * below for more details).
- SEQ *[numeric]*: Duo number (1...30).
- Time *[numeric]*: Time in seconds (sampled at 25 fps).
- ANN *[string]*: Annotated interaction (“Yes” = “interaction”, “No” = “no interaction”) based on aggregated information from 3 annotators.
- duo_role *[string]*: Annotated structure comprising of “Joint” or “Solo” terms referring to whether the musicians are both playing jointly or playing solo.

2) Movement descriptors

- X1 *[numeric]*: X coordinate position of Performer 1 (normalized and de-trended)
- Y1 *[numeric]*: Y coordinate position of Performer 1 (normalized and de-trended)
- R1 *[numeric]*: Radial coordinate of Performer 1
- A1 *[numeric]*: Angular coordinate of Performer 1
- X2, Y2, R2, A2 *[numeric]*: The same as above for Performer 2
- QoM12 *[numeric]*: Summed quantity of motion for Performers 1 and 2

3) Audio descriptors

- PulseClarity [*numeric*]: Estimated pulse clarity based on computational model (Lartillot et al., 2012).
- Envelope [*numeric*]: Audio envelope (Root-Mean-Square energy of envelope).
- Audio_WT_Energy [*numeric*]: Energy of wavelet transform of audio envelope.

4) Model predictors

- CWT_Energy [*numeric*]: CWT Energy of Performer 1 and 2 movements (over a range of 0.3-2.0 Hz)
- CWT_Energy_Interaction [*string*]: CWT Energy of Performer 1 and 2 movements (Broadband) forced into categorical predictions (“Yes” or “No”, see annotation) based on Youden index from the AUC classification analysis on the training sets.
- CWT_Energy1-5 [*numeric*]: CWT Energy of Performer 1 and 2 movements (frequency bands: 1=2.0Hz, 2=0.9Hz, 3=0.6Hz, 4=0.4 Hz, 5=0.3Hz)
- CWT_Phase [*numeric*]: Phase information of the CWT Energy
- WT_Energy_P1 [*numeric*]: WT Energy of Performer 1
- WT_Energy_P2 [*numeric*]: WT Energy of Performer 2
- WT_Energy_P1_and_P2 [*numeric*]: Summed WT Energy of Performers 1 and 2

*Video filenames

The video filenames refer to examples that have been collected earlier in a different study. They are released separately, see <http://datashare.is.ed.ac.uk/handle/10283/2840>. Note that some duos have not public granted access to their performances and hence 6 videos are not included in the Edinburgh data release (indicated as “Not available” below).

This dataset	In Edinburgh data
Standard_VP0304_04	Standard_A_1.mp4
Standard_VP0304_22	Standard_A_2.mp4
Standard_VP0910_01	Standard_B_1.mp4
Standard_VP0910_22	Standard_B_2.mp4
Standard_VP1112_03	Standard_C_1.mp4
Standard_VP1112_21	Standard_C_2.mp4
Standard_VP1112_26	Standard_C_3.mp4
Standard_VP1920_02	Not available

Standard_VP1920_15	Not available
Standard_VP1920_21	Not available
Standard_VP2122_02	Not available
Standard_VP2122_14	Not available
Standard_VP2122_23	Not available
Standard_VP2324_02	Standard_D_1.mp4
Standard_VP2324_21	Standard_D_2.mp4
Free_VP0102_01	Free_A_1.mp4
Free_VP0102_03	Free_A_2.mp4
Free_VP0102_14	Free_A_3.mp4
Free_VP0506_02	Free_B_1.mp4
Free_VP0506_08	Free_B_2.mp4
Free_VP0506_16	Free_B_3.mp4
Free_VP0708_02	Free_C_1.mp4
Free_VP0708_08	Free_C_2.mp4
Free_VP0708_18	Free_C_3.mp4
Free_VP1314_04	Free_D_1.mp4
Free_VP1314_12	Free_D_2.mp4
Free_VP1314_16	Free_D_3.mp4
Free_VP1516_02	Free_E_1.mp4
Free_VP1516_06	Free_E_2.mp4
Free_VP1516_15	Free_E_3.mp4
