## **Complementary information A**

| Reference | Year | Database | Signal | Preprocessing         | Extracted Features                  | Extraction Method                             | Classifier            | Model       |
|-----------|------|----------|--------|-----------------------|-------------------------------------|---|-----------------------|-------------|
| [23]      | 2019 | SEED     | EEG    | Filtering; DT-<br>CWT | MAV; PSD; FD; DE                    | MAV method; FFT; Higuchi method;<br>DE method | SRU models            | Dimensional |
| [24]      | 2016 | DEAP     | EEG    | -                     | PSD                                 | FFT   | FFT SVM               |             |
| [25]      | 2020 | DEAP     | EEG    | -                     | PSD                                 | FFT   | CNN and RNN<br>models | Dimensional |
| [26]      | 2016 | DEAP     | EEG    | -                     | IMFs entropies                      | EMD   | SVM                   | Dimensional |
| [27]      | 2019 | DEAP     | EEG    | -                     | PSD of IMF; first difference of IMF | VMD   | DNN                   | Dimensional |

Table A.1 - Review of related studies using EEG for emotion recognition.

| Reference | Year | Database                | Signal | Preprocessing  | Extracted Features   | <b>Extraction Method</b>      | Classifier  | Model       |
|-----------|------|-------------------------|--------|--|--|-------------------------------|---|-------------|
| [20]      | 2010 | Proprietary<br>Database | ECG    | -  | R wave location; Statistical features;<br>amplitude of P, R, S<br>waves; HRV; PSD of HRV   | DWT                           | Fisher KNN classifier                               | Discrete    |
| [28]      | 2015 | Proprietary<br>Database | ECG    | -  | Statistical features of RR intervals; LF and HF of HRV; Kurtosis and Skewness of HRV   | FFT                           | Simple<br>separation<br>classifier                  | Discrete    |
| [29]      | 2017 | Proprietary<br>Database | ECG    | Band pass filter;<br>Notch filter; Band<br>stop filter | R wave peak mean; R peak standard<br>deviation; mean distance of two R peak<br>points; RR standard deviation; R beat<br>counts; HRV mean | -                             | SVM; Naïve<br>Bayes; KNN;<br>Gaussian<br>classifier | Discrete    |
| [30]      | 2018 | Proprietary<br>Database | ECG    | -  | MP coefficients; statistical features of MP  | MP method; PCA;<br>Kernel PCA | PNN   | Dimensional |

Table A.2 - Review of related studies using ECG for emotion recognition.

| Reference | Year | Database                | Signal | Preprocessing             | Extracted Features                    | Extraction Method | Classifier | Model       |
|-----------|------|-------------------------|--------|---------------------------|---------------------------------------|-------------------|------------|-------------|
| [31]      | 2018 | Proprietary<br>Database | EDA    | -                         | Wavelet coefficients                  | CWT               | SVM        | Discrete    |
| [32]      | 2019 | DEAP                    | EDA    | Low pass buttworth filter | Frequency domain and wavelet features | WPT               | MLP        | Dimensional |
| [33]      | 2020 | DEAP                    | EDA    | -                         | Time and frequency domain features    | STFT              | CNN        | Dimensional |

Table A.3 - Review of related studies using EDA for emotion recognition.

| Reference | Year | Database                                     | Signal | Preprocessing | Extracted Features           | Extraction Method | Classifier                | Model       |
|-----------|------|--|--------|---------------|------------------------------|-------------------|---------------------------|-------------|
| [34]      | 2014 | Proprietary Database                         | RSP    | -             | Statistical features;<br>PSD | Burg algorithm    | KNN; SVM; RF;<br>MLP      | Discrete    |
| [35]      | 2017 | DEAP; Augsburg University affective database | RSP    | -             | -                            | SAE               | SAE + Logistic regression | Dimensional |

Table A.4 - Review of related studies using RSP for emotion recognition.

| Reference | Year | Database                               | Signal | Preprocessing             | Extracted Features                          | Extraction Method | Classifier                   | Model       |
|-----------|------|--|--------|---------------------------|---|-------------------|------------------------------|-------------|
| [36]      | 2013 | Proprietary Database                   | EMG    | Notch filter<br>Smoothing | Mean and standard deviation                 | HOS               | - KNN                        | Discrete    |
| [36]      |      |  | ECG    | -                         | R peak                                      | HOS               | KININ                        |             |
| [37]      | 2010 | Augsburg University affective database | EMG    | -                         | Wavelet coefficients                        | CWT               | SVM                          | Discrete    |
| [38]      | 2011 | Augsburg University affective database | EMG    | -                         | Maximum and minimum of wavelet coefficients | WT                | ANN / SVM / L-M<br>Algorithm | Discrete    |
| [39]      | 2014 | Proprietary Database                   | EMG    | -                         | Wavelet coefficients                        | WT                | SVM                          | Dimensional |

Table A.5 - Review of related studies using EMG for emotion recognition.