**Supplementary material**

**Supplementary Table 1. Gini-importance scores of the acoustic parameters in the diagnostic classifier (schizophrenia-spectrum disorder vs healthy control)**

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| --- | --- |
| **Parameter** | **Gini-importance** |
| F0semitoneFrom27.5Hz\_sma3nz\_amean\_numeric                     | 1.00 |
| F0semitoneFrom27.5Hz\_sma3nz\_stddevNorm\_numeric                | 1.27 |
| F0semitoneFrom27.5Hz\_sma3nz\_percentile20.0\_numeric            | 1.40 |
| F0semitoneFrom27.5Hz\_sma3nz\_percentile50.0\_numeric            | 0.72 |
| F0semitoneFrom27.5Hz\_sma3nz\_percentile80.0\_numeric            | 0.74 |
| F0semitoneFrom27.5Hz\_sma3nz\_pctlrange02\_numeric               | 1.01 |
| F0semitoneFrom27.5Hz\_sma3nz\_meanRisingSlope\_numeric           | 1.63 |
| F0semitoneFrom27.5Hz\_sma3nz\_stddevRisingSlope\_numeric         | 1.77 |
| F0semitoneFrom27.5Hz\_sma3nz\_meanFallingSlope\_numeric          | 1.42 |
| F0semitoneFrom27.5Hz\_sma3nz\_stddevFallingSlope\_numeric        | 1.33 |
| loudness\_sma3\_amean\_numeric                                   | 0.88 |
| loudness\_sma3\_stddevNorm\_numeric                              | 2.59 |
| loudness\_sma3\_percentile20.0\_numeric                          | 1.00 |
| loudness\_sma3\_percentile50.0\_numeric                          | 1.16 |
| loudness\_sma3\_percentile80.0\_numeric                          | 1.00 |
| loudness\_sma3\_pctlrange02\_numeric                             | 1.24 |
| loudness\_sma3\_meanRisingSlope\_numeric                         | 0.75 |
| loudness\_sma3\_stddevRisingSlope\_numeric                       | 0.89 |
| loudness\_sma3\_meanFallingSlope\_numeric                        | 0.75 |
| loudness\_sma3\_stddevFallingSlope\_numeric                      | 0.65 |
| spectralFlux\_sma3\_amean\_numeric                               | 0.76 |
| spectralFlux\_sma3\_stddevNorm\_numeric                          | 3.31 |
| mfcc1\_sma3\_amean\_numeric                                      | 0.82 |
| mfcc1\_sma3\_stddevNorm\_numeric                                 | 1.07 |
| mfcc2\_sma3\_amean\_numeric                                      | 1.12 |
| mfcc2\_sma3\_stddevNorm\_numeric                                 | 0.85 |
| mfcc3\_sma3\_amean\_numeric                                      | 1.14 |
| mfcc3\_sma3\_stddevNorm\_numeric                                 | 1.22 |
| mfcc4\_sma3\_amean\_numeric                                      | 1.19 |
| mfcc4\_sma3\_stddevNorm\_numeric                                 | 1.34 |
| jitterLocal\_sma3nz\_amean\_numeric                              | 1.52 |
| jitterLocal\_sma3nz\_stddevNorm\_numeric                         | 1.81 |
| shimmerLocaldB\_sma3nz\_amean\_numeric                           | 1.14 |
| shimmerLocaldB\_sma3nz\_stddevNorm\_numeric                      | 1.28 |
| HNRdBACF\_sma3nz\_amean\_numeric                                 | 0.73 |
| HNRdBACF\_sma3nz\_stddevNorm\_numeric                            | 0.83 |
| logRelF0H1H2\_sma3nz\_amean\_numeric                             | 1.00 |
| logRelF0H1H2\_sma3nz\_stddevNorm\_numeric                        | 0.83 |
| logRelF0H1A3\_sma3nz\_amean\_numeric                             | 0.62 |
| logRelF0H1A3\_sma3nz\_stddevNorm\_numeric                        | 1.07 |
| F1frequency\_sma3nz\_amean\_numeric                              | 1.30 |
| F1frequency\_sma3nz\_stddevNorm\_numeric                         | 1.68 |
| F1bandwidth\_sma3nz\_amean\_numeric                              | 1.35 |
| F1bandwidth\_sma3nz\_stddevNorm\_numeric                         | 1.08 |
| F1amplitudeLogRelF0\_sma3nz\_amean\_numeric                      | 2.16 |
| F1amplitudeLogRelF0\_sma3nz\_stddevNorm\_numeric                 | 1.93 |
| F2frequency\_sma3nz\_amean\_numeric                              | 1.11 |
| F2frequency\_sma3nz\_stddevNorm\_numeric                         | 0.88 |
| F2bandwidth\_sma3nz\_amean\_numeric                              | 1.12 |
| F2bandwidth\_sma3nz\_stddevNorm\_numeric                         | 3.89 |
| F2amplitudeLogRelF0\_sma3nz\_amean\_numeric                      | 1.54 |
| F2amplitudeLogRelF0\_sma3nz\_stddevNorm\_numeric                 | 1.57 |
| F3frequency\_sma3nz\_amean\_numeric                              | 0.87 |
| F3frequency\_sma3nz\_stddevNorm\_numeric                         | 0.89 |
| F3bandwidth\_sma3nz\_amean\_numeric                              | 1.36 |
| F3bandwidth\_sma3nz\_stddevNorm\_numeric                         | 1.04 |
| F3amplitudeLogRelF0\_sma3nz\_amean\_numeric                      | 1.42 |
| F3amplitudeLogRelF0\_sma3nz\_stddevNorm\_numeric                 | 2.25 |
| alphaRatioV\_sma3nz\_amean\_numeric                              | 0.75 |
| alphaRatioV\_sma3nz\_stddevNorm\_numeric                         | 1.02 |
| hammarbergIndexV\_sma3nz\_amean\_numeric                         | 0.85 |
| hammarbergIndexV\_sma3nz\_stddevNorm\_numeric                    | 0.78 |
| slopeV0500\_sma3nz\_amean\_numeric                               | 1.04 |
| slopeV0500\_sma3nz\_stddevNorm\_numeric                          | 1.12 |
| slopeV5001500\_sma3nz\_amean\_numeric                            | 2.40 |
| slopeV5001500\_sma3nz\_stddevNorm\_numeric                       | 1.69 |
| spectralFluxV\_sma3nz\_amean\_numeric                            | 0.92 |
| spectralFluxV\_sma3nz\_stddevNorm\_numeric                       | 0.86 |
| mfcc1V\_sma3nz\_amean\_numeric                                   | 0.86 |
| mfcc1V\_sma3nz\_stddevNorm\_numeric                              | 0.99 |
| mfcc2V\_sma3nz\_amean\_numeric                                   | 0.78 |
| mfcc2V\_sma3nz\_stddevNorm\_numeric                              | 0.96 |
| mfcc3V\_sma3nz\_amean\_numeric                                   | 0.90 |
| mfcc3V\_sma3nz\_stddevNorm\_numeric                              | 1.12 |
| mfcc4V\_sma3nz\_amean\_numeric                                   | 0.88 |
| mfcc4V\_sma3nz\_stddevNorm\_numeric                              | 0.92 |
| alphaRatioUV\_sma3nz\_amean\_numeric                             | 1.11 |
| hammarbergIndexUV\_sma3nz\_amean\_numeric                        | 0.88 |
| slopeUV0500\_sma3nz\_amean\_numeric                              | 1.05 |
| slopeUV5001500\_sma3nz\_amean\_numeric                           | 7.99 |
| spectralFluxUV\_sma3nz\_amean\_numeric                           | 1.10 |
| loudnessPeaksPerSec\_numeric                                   | 1.34 |
| VoicedSegmentsPerSec\_numeric                                 | 24.66 |
| MeanVoicedSegmentLengthSec\_numeric                            | 1.23 |
| StddevVoicedSegmentLengthSec\_numeric                          | 1.35 |
| MeanUnvoicedSegmentLength\_numeric                             | 3.55 |
| StddevUnvoicedSegmentLength\_numeric                           | 1.94 |
| equivalentSoundLevel\_dBp\_numeric                              | 1.17 |

**Supplementary Table 2. Gini-importance scores of the acoustic parameters in the psychotic symptoms classifier (positive vs negative symptoms**

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| --- | --- |
| **Parameter** | **Gini-importance** |
| F0semitoneFrom27.5Hz\_sma3nz\_amean\_numeric                     | 0.46 |
| F0semitoneFrom27.5Hz\_sma3nz\_stddevNorm\_numeric                | 0.42 |
| F0semitoneFrom27.5Hz\_sma3nz\_percentile20.0\_numeric            | 0.37 |
| F0semitoneFrom27.5Hz\_sma3nz\_percentile50.0\_numeric            | 0.58 |
| F0semitoneFrom27.5Hz\_sma3nz\_percentile80.0\_numeric            | 0.35 |
| F0semitoneFrom27.5Hz\_sma3nz\_pctlrange02\_numeric               | 0.42 |
| F0semitoneFrom27.5Hz\_sma3nz\_meanRisingSlope\_numeric           | 0.49 |
| F0semitoneFrom27.5Hz\_sma3nz\_stddevRisingSlope\_numeric         | 0.38 |
| F0semitoneFrom27.5Hz\_sma3nz\_meanFallingSlope\_numeric          | 0.31 |
| F0semitoneFrom27.5Hz\_sma3nz\_stddevFallingSlope\_numeric        | 0.32 |
| loudness\_sma3\_amean\_numeric                                   | 0.29 |
| loudness\_sma3\_stddevNorm\_numeric                              | 0.56 |
| loudness\_sma3\_percentile20.0\_numeric                          | 0.30 |
| loudness\_sma3\_percentile50.0\_numeric                          | 0.53 |
| loudness\_sma3\_percentile80.0\_numeric                          | 0.29 |
| loudness\_sma3\_pctlrange02\_numeric                             | 0.25 |
| loudness\_sma3\_meanRisingSlope\_numeric                         | 0.40 |
| loudness\_sma3\_stddevRisingSlope\_numeric                       | 0.49 |
| loudness\_sma3\_meanFallingSlope\_numeric                        | 0.40 |
| loudness\_sma3\_stddevFallingSlope\_numeric                      | 0.34 |
| spectralFlux\_sma3\_amean\_numeric                               | 0.21 |
| spectralFlux\_sma3\_stddevNorm\_numeric                          | 0.28 |
| mfcc1\_sma3\_amean\_numeric                                      | 0.45 |
| mfcc1\_sma3\_stddevNorm\_numeric                                 | 0.42 |
| mfcc2\_sma3\_amean\_numeric                                      | 0.30 |
| mfcc2\_sma3\_stddevNorm\_numeric                                 | 0.37 |
| mfcc3\_sma3\_amean\_numeric                                      | 0.46 |
| mfcc3\_sma3\_stddevNorm\_numeric                                 | 1.12 |
| mfcc4\_sma3\_amean\_numeric                                      | 0.61 |
| mfcc4\_sma3\_stddevNorm\_numeric                                 | 0.27 |
| jitterLocal\_sma3nz\_amean\_numeric                              | 0.52 |
| jitterLocal\_sma3nz\_stddevNorm\_numeric                         | 0.97 |
| shimmerLocaldB\_sma3nz\_amean\_numeric                           | 0.51 |
| shimmerLocaldB\_sma3nz\_stddevNorm\_numeric                      | 0.55 |
| HNRdBACF\_sma3nz\_amean\_numeric                                 | 0.42 |
| HNRdBACF\_sma3nz\_stddevNorm\_numeric                            | 0.44 |
| logRelF0H1H2\_sma3nz\_amean\_numeric                             | 0.32 |
| logRelF0H1H2\_sma3nz\_stddevNorm\_numeric                        | 0.42 |
| logRelF0H1A3\_sma3nz\_amean\_numeric                             | 0.25 |
| logRelF0H1A3\_sma3nz\_stddevNorm\_numeric                        | 0.39 |
| F1frequency\_sma3nz\_amean\_numeric                              | 0.92 |
| F1frequency\_sma3nz\_stddevNorm\_numeric                         | 0.73 |
| F1bandwidth\_sma3nz\_amean\_numeric                              | 1.07 |
| F1bandwidth\_sma3nz\_stddevNorm\_numeric                         | 0.28 |
| F1amplitudeLogRelF0\_sma3nz\_amean\_numeric                      | 0.41 |
| F1amplitudeLogRelF0\_sma3nz\_stddevNorm\_numeric                 | 0.64 |
| F2frequency\_sma3nz\_amean\_numeric                              | 0.53 |
| F2frequency\_sma3nz\_stddevNorm\_numeric                         | 0.85 |
| F2bandwidth\_sma3nz\_amean\_numeric                              | 0.92 |
| F2bandwidth\_sma3nz\_stddevNorm\_numeric                         | 0.48 |
| F2amplitudeLogRelF0\_sma3nz\_amean\_numeric                      | 0.40 |
| F2amplitudeLogRelF0\_sma3nz\_stddevNorm\_numeric                 | 0.68 |
| F3frequency\_sma3nz\_amean\_numeric                              | 0.66 |
| F3frequency\_sma3nz\_stddevNorm\_numeric                         | 1.01 |
| F3bandwidth\_sma3nz\_amean\_numeric                              | 0.82 |
| F3bandwidth\_sma3nz\_stddevNorm\_numeric                         | 0.41 |
| F3amplitudeLogRelF0\_sma3nz\_amean\_numeric                      | 0.48 |
| F3amplitudeLogRelF0\_sma3nz\_stddevNorm\_numeric                 | 0.70 |
| alphaRatioV\_sma3nz\_amean\_numeric                              | 0.30 |
| alphaRatioV\_sma3nz\_stddevNorm\_numeric                         | 0.91 |
| hammarbergIndexV\_sma3nz\_amean\_numeric                         | 0.29 |
| hammarbergIndexV\_sma3nz\_stddevNorm\_numeric                    | 0.52 |
| slopeV0500\_sma3nz\_amean\_numeric                               | 0.49 |
| slopeV0500\_sma3nz\_stddevNorm\_numeric                          | 0.50 |
| slopeV5001500\_sma3nz\_amean\_numeric                            | 0.38 |
| slopeV5001500\_sma3nz\_stddevNorm\_numeric                       | 0.54 |
| spectralFluxV\_sma3nz\_amean\_numeric                            | 0.33 |
| spectralFluxV\_sma3nz\_stddevNorm\_numeric                       | 0.38 |
| mfcc1V\_sma3nz\_amean\_numeric                                   | 0.40 |
| mfcc1V\_sma3nz\_stddevNorm\_numeric                              | 0.76 |
| mfcc2V\_sma3nz\_amean\_numeric                                   | 0.52 |
| mfcc2V\_sma3nz\_stddevNorm\_numeric                              | 0.59 |
| mfcc3V\_sma3nz\_amean\_numeric                                   | 0.41 |
| mfcc3V\_sma3nz\_stddevNorm\_numeric                              | 0.66 |
| mfcc4V\_sma3nz\_amean\_numeric                                   | 0.27 |
| mfcc4V\_sma3nz\_stddevNorm\_numeric                              | 0.36 |
| alphaRatioUV\_sma3nz\_amean\_numeric                             | 0.82 |
| hammarbergIndexUV\_sma3nz\_amean\_numeric                        | 0.47 |
| slopeUV0500\_sma3nz\_amean\_numeric                              | 1.56 |
| slopeUV5001500\_sma3nz\_amean\_numeric                           | 0.30 |
| spectralFluxUV\_sma3nz\_amean\_numeric                           | 0.29 |
| loudnessPeaksPerSec\_numeric                                   | 0.28 |
| VoicedSegmentsPerSec\_numeric                                  | 0.57 |
| MeanVoicedSegmentLengthSec\_numeric                            | 0.61 |
| StddevVoicedSegmentLengthSec\_numeric                          | 0.48 |
| MeanUnvoicedSegmentLength\_numeric                             | 0.27 |
| StddevUnvoicedSegmentLength\_numeric                           | 0.20 |
| equivalentSoundLevel\_dBp\_numeric                              | 0.31 |