

## Appendix – Features for machine learning and their p values for separating the

### 3 groups

Features	P value
quantile 25 of amplitude of FFT of breathing	<0.05
quantile 25 of amplitude of FFT of heart sounds	<0.05
quantile 25 of heart rate	<0.05
quantile 25 of respiration rate	<0.05
quantile 25 of envelope of breathing sounds	<0.05
quantile 25 of mean Value	<0.05
quantile 25 of median Value	<0.05
quantile 25 of standard Deviation	<0.05
quantile 25 of standard Deviation of Envelope	<0.05
quantile 25 of mean envelope	<0.05
quantile 25 of mean absolute deviation	<0.05
quantile 25 of quantile 25	<0.05
quantile 25 of quantile75	<0.05
quantile 25 of signalIQR	<0.05
quantile 25 of sampleSkewness	<0.05
quantile 25 of sampleKurtosis	<0.05
quantile 25 of signalEntropy	<0.05
quantile 25 of spectral entropy	<0.05
quantile 25 of dominant frequency value (range 0-400 Hz)	<0.05
quantile 25 of dominant frequency magnitude (range 0-400 Hz)	<0.05
quantile 25 of dominant frequency ratio (range 0-400 Hz)	<0.05
quantile 25 of sum FFT (range 0-400 Hz)	<0.05
quantile 25 of dominant frequency value (range 400-800 Hz)	<0.05
quantile 25 of dominant frequency magnitude(range 400-800 Hz)	<0.05
quantile 25 of dominant frequency ratio(range 400-800 Hz)	<0.05
quantile 25 of sum FFT (range 400-800 Hz)	<0.05
quantile 25 of dominant frequency value (range 800-1200 Hz)	<0.05
quantile 25 of dominant frequency magnitude (range 800-1200 Hz)	<0.05
quantile 25 of dominant frequency ratio (range 800-1200 Hz)	<0.05
quantile 25 of sum FFT (range 800-1200 Hz)	<0.05
quantile 25 of dominant frequency value (range 1200-1600 Hz)	<0.05
quantile 25 of dominant frequency magnitude (range 1200-1600 Hz)	<0.05
quantile 25 of dominant frequency ratio (range 1200-1600 Hz)	<0.05
quantile 25 of sum FFT (range 1200-1600 Hz)	<0.05
quantile 25 of dominant frequency magnitude (range 1600-2000 Hz)	<0.05
quantile 25 of dominant frequency ratio (range 1600-2000 Hz)	<0.05
quantile 25 of dominant frequency ratio (range 1600-2000 Hz)	<0.05
quantile 25 of sum FFT (range 1600-2000 Hz)	<0.05
quantile 25 of MFCC1	<0.05
quantile 25 of MFCC2	>0.05
quantile 25 of MFCC3	<0.05

quantile 25 of MFCC4	<0.05
quantile 25 of MFCC5	<0.05
quantile 25 of MFCC6	<0.05
quantile 25 of MFCC7	<0.05
quantile 25 of MFCC8	<0.05
quantile 25 of MFCC9	<0.05
quantile 25 of MFCC10	<0.05
quantile 25 of MFCC11	<0.05
quantile 25 of MFCC12	<0.05
quantile 25 of MFCC13	>0.05
quantile 25 of MFCC14	<0.05
quantile 25 of MFCC15	<0.05
quantile 25 of MFCC16	<0.05
quantile 25 of MFCC17	<0.05
quantile 25 of MFCC18	<0.05
quantile 25 of MFCC19	<0.05
quantile 25 of MFCC20	<0.05
quantile 25 of sum of FFT 0-2000 Hz	<0.05
quantile 25 of MFCC1 of infrasound	<0.05
quantile 25 of MFCC2 infrasound	<0.05
quantile 25 of MFCC3 infrasound	<0.05
quantile 25 of MFCC4 infrasound	<0.05
quantile 25 of MFCC5 infrasound	>0.05
quantile 25 of MFCC6 infrasound	<0.05
quantile 25 of MFCC7 infrasound	<0.05
quantile 25 of MFCC8 infrasound	>0.05
quantile 25 of MFCC9 infrasound	>0.05
quantile 25 of MFCC10 infrasound	<0.05
quantile 25 of MFCC11 infrasound	>0.05
quantile 25 of MFCC12 infrasound	>0.05
quantile 25 of MFCC13 infrasound	>0.05
quantile 25 of MFCC14 infrasound	<0.05
quantile 25 of MFCC15 infrasound	<0.05
quantile 25 of MFCC16 infrasound	>0.05
quantile 25 of MFCC17 infrasound	<0.05
quantile 25 of MFCC18 infrasound	<0.05
quantile 25 of MFCC19 infrasound	<0.05
quantile 25 of MFCC20 infrasound	<0.05
quantile 25 of sum of FFT 0-20 Hz	<0.05
quantile 75 of amplitude of FFT of breathing	<0.05
quantile 75 of amplitude of FFT of heart sounds	<0.05
quantile 75 of heart rate	<0.05
quantile 75 of respiration rate	<0.05
quantile 75 of envelope of breathing sounds	<0.05
quantile 75 of mean Value	<0.05
quantile 75 of median Value	<0.05

quantile 75 of standard Deviation	<0.05
quantile 75 of standard Deviation of Envelope	<0.05
quantile 75 of mean envelope	<0.05
quantile 75 of mean absolute deviation	<0.05
quantile 75 of quantile 75	<0.05
quantile 75 of quantile75	<0.05
quantile 75 of signalIQR	<0.05
quantile 75 of sampleSkewness	<0.05
quantile 75 of sampleKurtosis	<0.05
quantile 75 of signalEntropy	<0.05
quantile 75 of spectral entropy	<0.05
quantile 75 of dominant frequency value (range 0-400 Hz)	<0.05
quantile 75 of dominant frequency magnitude (range 0-400 Hz)	<0.05
quantile 75 of dominant frequency ratio (range 0-400 Hz)	<0.05
quantile 75 of sum FFT (range 0-400 Hz)	<0.05
quantile 75 of dominant frequency value (range 400-800 Hz)	<0.05
quantile 75 of dominant frequency magnitude(range 400-800 Hz)	<0.05
quantile 75 of dominant frequency ratio(range 400-800 Hz)	<0.05
quantile 75 of sum FFT (range 400-800 Hz)	<0.05
quantile 75 of dominant frequency value (range 800-1200 Hz)	<0.05
quantile 75 of dominant frequency magnitude (range 800-1200 Hz)	<0.05
quantile 75 of dominant frequency ratio (range 800-1200 Hz)	<0.05
quantile 75 of sum FFT (range 800-1200 Hz)	<0.05
quantile 75 of dominant frequency value (range 1200-1600 Hz)	<0.05
quantile 75 of dominant frequency magnitude (range 1200-1600 Hz)	<0.05
quantile 75 of dominant frequency ratio (range 1200-1600 Hz)	<0.05
quantile 75 of sum FFT (range 1200-1600 Hz)	<0.05
quantile 75 of dominant frequency magnitude (range 1600-2000 Hz)	<0.05
quantile 75 of dominant frequency ratio (range 1600-2000 Hz)	>0.05
quantile 75 of dominant frequency ratio (range 1600-2000 Hz)	<0.05
quantile 75 of sum FFT (range 1600-2000 Hz)	<0.05
quantile 75 of MFCC1	<0.05
quantile 75 of MFCC2	<0.05
quantile 75 of MFCC3	<0.05
quantile 75 of MFCC4	<0.05
quantile 75 of MFCC5	<0.05
quantile 75 of MFCC6	<0.05
quantile 75 of MFCC7	<0.05
quantile 75 of MFCC8	<0.05
quantile 75 of MFCC9	<0.05
quantile 75 of MFCC10	<0.05
quantile 75 of MFCC11	<0.05
quantile 75 of MFCC12	<0.05
quantile 75 of MFCC13	<0.05
quantile 75 of MFCC14	<0.05
quantile 75 ofMFCC15	<0.05

quantile 75 of MFCC16	<0.05
quantile 75 of MFCC17	<0.05
quantile 75 of MFCC18	<0.05
quantile 75 of MFCC19	<0.05
quantile 75 of MFCC20	<0.05
quantile 75 of sum of FFT 0-2000 Hz	<0.05
quantile 75 of MFCC1 of infrasound	<0.05
quantile 75 of MFCC2 infrasound	<0.05
quantile 75 of MFCC3 infrasound	<0.05
quantile 75 of MFCC4 infrasound	<0.05
quantile 75 of MFCC5 infrasound	>0.05
quantile 75 of MFCC6 infrasound	<0.05
quantile 75 of MFCC7 infrasound	>0.05
quantile 75 of MFCC8 infrasound	<0.05
quantile 75 of MFCC9 infrasound	>0.05
quantile 75 of MFCC10 infrasound	>0.05
quantile 75 of MFCC11 infrasound	<0.05
quantile 75 of MFCC12 infrasound	<0.05
quantile 75 of MFCC13 infrasound	>0.05
quantile 75 of MFCC14 infrasound	>0.05
quantile 75 of MFCC15 infrasound	<0.05
quantile 75 of MFCC16 infrasound	<0.05
quantile 75 of MFCC17 infrasound	<0.05
quantile 75 of MFCC18 infrasound	<0.05
quantile 75 of MFCC19 infrasound	<0.05
quantile 75 of MFCC20 infrasound	<0.05
quantile 75 of sum of FFT 0-20 Hz	<0.05