

Supplementary Materials

Table S1. Balanced accuracies of the approximate entropy of the small subset of data with the test values of m and r_{SD} . Average reports the average accuracy across the band. Ordered from the highest average balanced accuracy to the lowest in the Average column.

| m | r_{SD} | Broad | Delta | Theta | Alpha | Beta | Gamma | Average |
|-----|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 2 | 0.2 | 81.81% | 74.40% | 79.24% | 81.16% | 72.33% | 68.78% | 76.29% |
| 1 | 0.25 | 79.77% | 73.27% | 75.31% | 77.39% | 74.98% | 64.06% | 74.13% |
| 2 | 0.25 | 81.66% | 69.85% | 76.43% | 75.43% | 75.34% | 60.59% | 73.22% |
| 1 | 0.15 | 81.66% | 73.36% | 77.93% | 73.40% | 70.55% | 61.69% | 73.10% |
| 1 | 0.1 | 82.30% | 71.99% | 76.23% | 72.04% | 70.34% | 63.10% | 72.66% |
| 2 | 0.1 | 81.49% | 68.01% | 77.39% | 73.14% | 70.62% | 63.82% | 72.41% |
| 2 | 0.15 | 80.29% | 71.65% | 71.51% | 73.08% | 75.09% | 59.03% | 71.77% |
| 1 | 0.2 | 80.63% | 68.59% | 74.45% | 73.41% | 69.78% | 59.27% | 71.02% |

Table S2. Balanced accuracies of the sample entropy of the small subset of data with the test values of m and r_{SD} . Average reports the average accuracy across the band. Ordered from the highest average balanced accuracy to the lowest in the Average column.

| m | r_{SD} | Broad | Delta | Theta | Alpha | Beta | Gamma | Average |
|-----|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1 | 0.15 | 83.34% | 79.16% | 73.28% | 80.65% | 74.75% | 68.06% | 76.54% |
| 1 | 0.1 | 84.14% | 78.34% | 77.12% | 73.72% | 71.91% | 65.46% | 75.11% |
| 1 | 0.25 | 80.18% | 77.13% | 76.61% | 73.83% | 72.39% | 64.56% | 74.12% |
| 2 | 0.15 | 79.82% | 77.74% | 73.81% | 69.12% | 75.68% | 67.38% | 73.92% |
| 2 | 0.25 | 83.50% | 73.07% | 77.90% | 69.06% | 65.15% | 67.62% | 72.72% |
| 2 | 0.1 | 80.43% | 69.54% | 72.86% | 65.92% | 75.94% | 69.08% | 72.30% |
| 1 | 0.2 | 78.31% | 71.01% | 72.65% | 70.36% | 70.96% | 62.74% | 71.01% |
| 2 | 0.2 | 79.00% | 73.29% | 71.14% | 64.71% | 67.31% | 64.31% | 69.96% |

Table S3. Precisions of the entropy metrics for every classifier and EEG frequency band (ECG is included in every band). Bold values denote the highest precision amongst the classifiers for each EEG band and entropy measure.

| Features | Classifiers | All | Broad | Delta | Theta | Alpha | Beta | Gamma |
|--|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Renyi entropy | SVM | 93.15% | 81.03% | 81.45% | 83.42% | 84.21% | 82.41% | 82.21% |
| | kNN | 96.12% | 88.25% | 86.04% | 91.00% | 91.54% | 92.63% | 90.78% |
| | RF | 92.80% | 86.13% | 85.15% | 89.70% | 89.01% | 90.32% | 89.10% |
| | GBM | 86.14% | 78.76% | 79.96% | 81.73% | 81.42% | 79.34% | 81.28% |
| Sample entropy $m = 1, r = 0.15*SD$ | SVM | 87.80% | 81.57% | 75.13% | 77.33% | 74.17% | 74.81% | 68.95% |
| | kNN | 92.08% | 84.30% | 73.03% | 75.21% | 70.02% | 74.49% | 69.16% |
| | RF | 82.82% | 82.57% | 74.93% | 76.23% | 70.33% | 73.48% | 69.49% |
| | GBM | 80.77% | 77.23% | 72.82% | 74.75% | 71.04% | 72.37% | 69.35% |
| Approximate entropy $m = 2, r = 0.2*SD$ | SVM | 89.00% | 82.35% | 74.22% | 77.95% | 76.65% | 73.53% | 69.31% |
| | kNN | 92.49% | 85.10% | 72.56% | 76.34% | 75.67% | 76.42% | 70.04% |
| | RF | 83.42% | 83.59% | 74.23% | 78.35% | 74.66% | 74.96% | 70.60% |
| | GBM | 81.07% | 78.11% | 72.89% | 74.93% | 71.84% | 72.48% | 70.06% |
| SVD entropy | SVM | 87.37% | 79.70% | 73.32% | 74.98% | 73.05% | 71.03% | 66.86% |
| | kNN | 90.49% | 80.21% | 68.72% | 71.68% | 70.42% | 70.60% | 63.33% |
| | RF | 80.93% | 80.35% | 72.23% | 74.03% | 71.28% | 72.45% | 64.95% |
| | GBM | 79.97% | 76.95% | 71.67% | 73.47% | 69.82% | 71.18% | 66.17% |
| Spectral entropy | SVM | 84.27% | 79.54% | 72.72% | 73.56% | 73.63% | 71.93% | 67.05% |
| | kNN | 86.84% | 80.81% | 70.03% | 69.84% | 71.57% | 73.77% | 64.07% |
| | RF | 77.03% | 80.35% | 72.53% | 71.13% | 72.30% | 74.41% | 67.04% |
| | GBM | 77.47% | 76.78% | 71.26% | 71.96% | 70.41% | 72.36% | 68.67% |
| Wavelet entropy | SVM | 66.65% | 64.99% | 64.56% | 71.00% | 61.18% | 61.12% | 60.42% |
| | kNN | 70.01% | 62.34% | 62.54% | 66.91% | 61.15% | 60.15% | 59.81% |
| | RF | 63.91% | 62.71% | 62.10% | 67.21% | 60.53% | 60.81% | 60.71% |
| | GBM | 66.55% | 62.66% | 62.49% | 68.78% | 61.41% | 61.00% | 61.77% |

Table S4. Recalls of the entropy metrics for every classifier and EEG frequency band (ECG is included in every band). Bold values denote the highest recall amongst the classifiers for each EEG band and entropy measure.

| Features | Classifiers | All | Broad | Delta | Theta | Alpha | Beta | Gamma |
|--|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Renyi entropy | SVM | 93.22% | 80.50% | 75.62% | 87.55% | 84.36% | 86.84% | 83.81% |
| | kNN | 95.19% | 83.16% | 80.24% | 88.79% | 89.08% | 89.67% | 89.46% |
| | RF | 96.92% | 88.13% | 84.65% | 92.38% | 92.00% | 93.59% | 91.32% |
| | GBM | 83.70% | 72.01% | 70.92% | 80.44% | 81.52% | 80.58% | 80.77% |
| Sample entropy $m = 1, r = 0.15*SD$ | SVM | 86.46% | 65.53% | 66.98% | 61.53% | 58.63% | 53.28% | 54.39% |
| | kNN | 84.28% | 77.00% | 66.50% | 65.96% | 58.68% | 65.99% | 61.10% |
| | RF | 87.35% | 81.74% | 73.03% | 74.77% | 70.87% | 72.73% | 71.88% |
| | GBM | 74.00% | 63.36% | 62.64% | 62.04% | 58.74% | 57.49% | 60.68% |
| Approximate entropy $m = 2, r = 0.2*SD$ | SVM | 87.82% | 68.25% | 63.26% | 62.31% | 65.47% | 53.74% | 52.14% |
| | kNN | 86.28% | 76.74% | 65.99% | 69.09% | 66.84% | 68.53% | 61.88% |
| | RF | 88.43% | 81.77% | 71.95% | 76.52% | 76.38% | 74.34% | 70.90% |
| | GBM | 74.92% | 64.72% | 61.03% | 63.15% | 63.95% | 59.45% | 61.47% |
| SVD entropy | SVM | 85.20% | 62.80% | 55.52% | 57.33% | 58.33% | 74.93% | 53.25% |
| | kNN | 77.01% | 71.04% | 61.39% | 62.30% | 61.38% | 64.14% | 54.66% |
| | RF | 83.24% | 79.01% | 69.79% | 69.09% | 70.93% | 74.79% | 64.82% |
| | GBM | 71.93% | 61.57% | 58.82% | 57.99% | 58.17% | 67.93% | 52.52% |
| Spectral entropy | SVM | 81.03% | 63.06% | 59.44% | 57.06% | 56.99% | 74.38% | 49.05% |
| | kNN | 71.01% | 71.65% | 63.57% | 60.31% | 63.77% | 66.04% | 54.91% |
| | RF | 81.25% | 78.84% | 72.14% | 70.85% | 72.52% | 76.82% | 68.14% |
| | GBM | 69.63% | 62.93% | 60.72% | 58.20% | 59.10% | 70.30% | 53.71% |
| Wavelet entropy | SVM | 68.93% | 51.53% | 50.48% | 55.93% | 46.04% | 54.90% | 51.56% |
| | kNN | 20.51% | 53.74% | 54.20% | 55.01% | 51.14% | 47.21% | 47.07% |
| | RF | 73.44% | 65.88% | 65.19% | 68.81% | 63.77% | 66.74% | 65.85% |
| | GBM | 59.26% | 49.20% | 48.28% | 57.85% | 45.66% | 47.79% | 48.56% |