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| Author-Year | Dataset details | Algorithm used | Results/metrics | Remarks (limitations of the algorithm) |
| Yohei Mukai  2019 | Sleep states:   * state1: Deep sleep with eyes closed. No eye movements. Gentle regular breathing. Sometimes sucking. * state2: Light sleep with eyes closed. Rapid eye movements can be observed under closed lids. Regular breathing. Slight voluntary movement. Awake states * state3: Drowsy or semi-dozing. Eyes may be open or closed, eyelids fluttering. Irregular breathing. Sporadic spontaneous movement. * state4: Alert, with bright look. Slight voluntary movement. * state5: Eyes open. Active voluntary movement. * state6: Crying.   State1=681  State2=1033  State3=200  State4=54  State5=72  State6=24  Total=2064 | Feature extraction:   * Gradient feature. * Spatio-temporal HOGV feature.   Classification:   * SVM. * Random forest. | the highest accuracy rate (54.4%) was obtained by the gradient feature and Random Forest, but there was no significant difference in the results for any other combination. | * method is inadequate in dealing with imbalanced data. * Physical challenges of recording the data in NICU is pretty challenging. * Implementation of deep neural networks like LSTM is recommended in future improvements. |