

Project Name: Reliable classification of cyclic alternating pattern (CAP) for sleep disorders

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Funding Agency: Jaypee Institute of Information Technology

Scheme: Institute Research and Development Project Scheme (IRDPS)

Start-up Research Grant Approved Fund: Rs. 80,000/

Received Fund: Rs. 80,000/

Project Summary:

The objective of this project is to classify various sleep disorders, occurring during non-rapid eye movement (NREM) depending upon the abnormal amounts of cyclic alternating pattern (CAP). A lot of work has been done to develop an automatic CAP-scoring algorithm. These methods rely on the classification, based on the spectral features extracted from the electroencephalogram (EEG) signals. Although all these methods achieve good results, but they either require some amount of clinician intervention or do not achieve enough accuracy to support the clinical diagnosis. Hence, none of them is yet applied to clinical practice. In this project, our focus is to design a reliable automatic system for the classification of sleep disorders using improved spectral features and local patterns, without clinician intervention and with better accuracy.

Deliverables:

- Implementation of existing algorithms on the dataset.
- Identification of optimal algorithm using hand-crafted features. Fine tune the algorithm based on the results obtained from the previous stage.