Artificial intelligence-based epileptic seizure detection framework using EEG signal
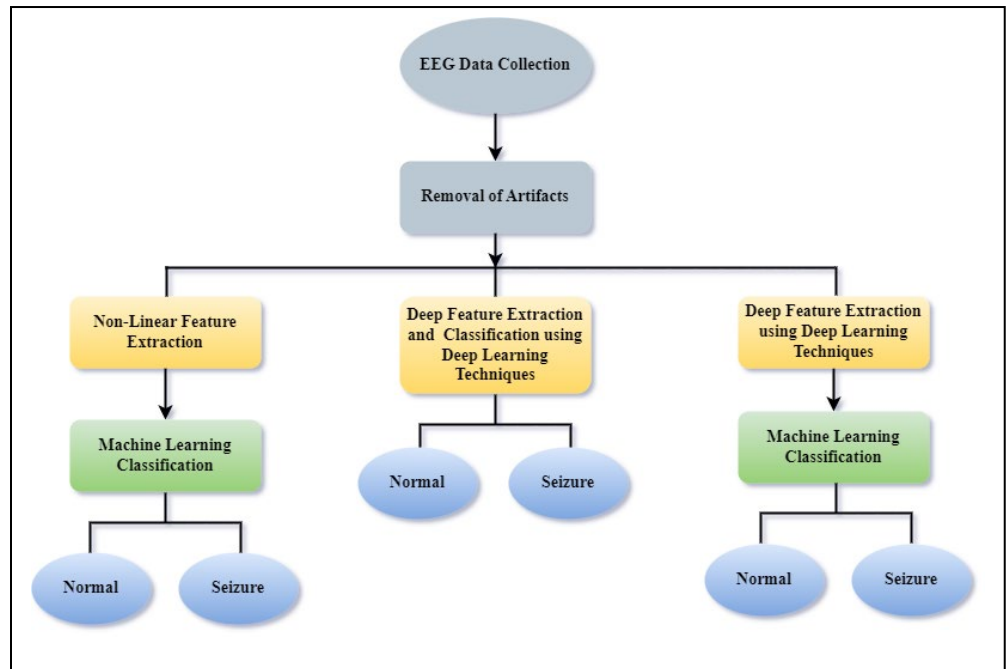
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Graphical Abstract/ Layout

Project Description:

Epileptic seizure detection and diagnosis heavily depend on EEG data, including preprocessing, feature extraction, and classification stages. Even though several seizure detection techniques have been suggested in recent decades, none can claim they are reliable for every patient, recording, or environment, not considering the effects of all artifacts. So, it is challenging to identify epileptic seizures accurately and early to treat patients and limit the risk of future seizures. As a result, in-depth research and prevention of epilepsy are essential to treat patients properly. Therefore, precise epileptic seizure detection is still a significant research problem.

Therefore, in this proposal, we plan to develop AI-based models for fast disease detection with high accuracy.

(i) Non-linear feature extraction and classification using machine learning.

(ii) Deep feature extraction and classification using deep learning.

(iii) Deep feature extraction using deep learning and classification using machine learning.

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