**Detection and Localization of Epileptic Seizure:**

The prime motivation of the project was developing a telemedicine service

for the rural clinicians where lack of expertise and facilities is a major problem resulting in the misdiagnosis of the type of epilepsy. Here,128 channel of EEG data sequences was segmented into 1024 data points and pre-processed using de-noising techniques, ICA and Complex Dual Tree wavelet transform. Next, we classified the Ictal and Interictal regions using machine learning algorithms and boosted its performance using Phase Amplitude Coupling (PAC). For localizing the origin and distribution of seizure activity, sLORETA algorithm was implemented and the results were superimposed on an MNI head model. The accuracy of localization was further improved using compressive sensing.The above results were incorporated into an user friendly MATLAB GUI. This is an affordable alternative for the poor sections of the society.