The dataset comprised 14 patients with paranoid schizophrenia and 14 healthy controls. Data were acquired with the sampling frequency of 250 Hz using the standard 10-20 EEG montage with 19 EEG channels: Fp1, Fp2, F7, F3, Fz, F4, F8, T3, C3, Cz, C4, T4, T5, P3, Pz, P4, T6, O1, O2. The reference electrode was placed between electrodes Fz and Cz.

Functional Magnetic Resonance Imaging (fMRI) obtain the sub- ject’s performance in cognitive tasks and may find significant differences between the patient’s data and controls. The input data of classifiers may imply alterations in diagnosis; therefore, it is essential to en- sure an adequate representation to describe the entire dataset classified.

The dataset of schizophrenic patients at their resting state was downloaded from the SchizConnect site, where the fMRI data, during resting state, was acquired. We calculate preprocessed the data through multiple procedures and finally obtained time series data from the acquired spatial maps. Its been reassured that no pre-trained model was used and no preselected category of datasets was used. Since the dataset was unlabeled so unsupervised learning has been utilized to draw further features from the already extracted features achieved by applying PCA on the dataset. The model to work as the backbone of the Unsupervised Learning is AutoEncoder. From which encoded features were collected finally and also tested on K-Means clustering to check the validation of the collected features. Cluster number chosen was 2 for Binary Classification as in, 1 for diagnosed and 0 for healthy controls.