**Introduction:**

This chapter provides an overview of how previous researches have looked into EEG signal and how Machine Learning techniques were utilized in order to detect depression among individuals. Brief about those works are highlighted and the analysis processes is described. What were the challenges and how accurate results were found will be discussed in this chapter.

**Challenges:**

Even though EEG is one of the effective ways to predict and analyze depression and related mental health conditions, EEG signal is non-stationary, complex and hard to generalize because of the variation among people’s age, variation etc. Also very few researches were done on depression, most of the analysis we made only upon other mental health issues [2].