**EEG BASED EYE STATE CLASSIFICATION**

**A PROJECT REPORT**

*Submitted by*

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*in partial fulfillment for the award of the degree*

*of*

**BACHELOR OF ENGINEERING**

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**BONAFIDE CERTIFICATE**

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**DECLARATION**

We hereby declare the work entitled “**EEG BASED EYE STATE CLASSIFICATION ”** is submitted in partial fulfillment of the requirement for the award of the degree in B.E., Computer Science and Engineering, University College of Engineering(BIT Campus), Tiruchirappalli, is a record of our own work carried out by us during the academic year 2018-2019 under the supervision and guidance of Mrs. K. Saranya, Teaching Fellow, Department of Computer Science and Engineering, University College of Engineering(BIT Campus), Tiruchirappalli. The extent and source of information are derived from the existing literature and have been indicated through the dissertation at the appropriate places. The matter embodied in this work is original and has not been submitted for the award of any degree, either in this or any other University.

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## ABSTRACT

## Electroencephalogram (EEG) is a signal which contains information about every state of the brain. Using EEG signals eye state of a person can be predicted for the purpose of examining their conscious state. Based on the EEG signals each and every activities are the person are recorded. The main aim of this project is to classify and predict the eye state of every person using Machine Learning approaches. Support Vector Machine (SVM), Logistic Regression, Neural network and LSTM algorithms are used for classification as well as prediction. Performance of every algorithm is being compared for getting better accuracy. SVM algorithm gives 69% accuracy, Logistic Regression gives 52%, Neural network algorithm results in 75% and LSTM gives 72%. Among all these Neural network results in better performance and gives efficient accuracy.

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| 5.1  5.2.1  5.2.3  5.2.4  5.2.5  5.2.5 | Architecture of Proposed System  Figure of Electrodes Placement  SVM Algorithm  Logistic Regression  Neural Networks  LSTM    **LIST OF ABBREVIATIONS**   |  |  | | --- | --- | | API  ANN | Application Programming Interface  Artificial Neural Network | | EEG  LR  LSTM  NN  NLP  RBF | Electro EncephaloGram  Logistic Regression  Long Short-Term Memory  Neural Network  Natural Language Processing  Radial Basis Function | | SVM | Support Vector Machine | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | 16  18  20  21  22  23 |