Abstract

Electroencephalography (EEG) is a signal monitoring which observes brain waves through electrodes. This set of signals can be applied to Brain-computer Interface (BCI). There are many applications of BCI, one of them can classify the Eye-state, both eyes open or closed. For those signals recognizing, it needs to determine a method of classifier system. In this article, Gaussian Process is implemented as probabilistic classifier to categorize Eye-state based on Electroencephalography signal. For performance, Gaussian Process classifier had reached 98.663% accuracy, 98.283% precision, 98.849% recall, and 98.565% of f1-score, with using Matérn as covariance function with parameter parameter $\nu = \frac{3}{2}$, testing-training ratio 1:9, and one time of Newton's iterations.

Keywords: Electroencephalography, Brain-computer Interface, Eye-state, Gaussian Process