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## Abstract

Construction of a system for measuring the brain activity (electroencephalogram (EEG)) and recognising thinking patterns comprises significant challenges, in addition to the noise and distortion present in any measuring technique. One of the most major applications of measuring and understanding EGG is the brain-computer interface (BCI) technology. In this paper, ANNs (feedforward back-prop and Self Organising Maps) for EEG data classification will be implemented and compared to abductive-based networks, namely GMDH (Group Methods of Data Handling) to show how GMDH can optimally (i. e. noise and accuracy) classify a given set of BCI's EEG signals. It is shown that GMDH provides such improvements. In this endeavour, EGG classification based on GMDH will be researched for comprehensible classification without scarifying accuracy. GMDH is suggested to be used to optimally classify a given set of BCI's EEG signals. The other areas related to BCI will also be addressed yet within the context of this purpose.

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## **Index Terms**

Computer Science

Artificial Intelligence

**Keywords**

GMDH EEG BCI ANN Supervised ANN Unsupervised SOM