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| Abstract |  |
| Brain-Computer Interface (BCI) is an advanced and multidisciplinary active research domain based on neuroscience, signal processing, biomedical sensors, hardware, etc. Since the last decades, several groundbreaking research has been conducted in this domain. Still, no comprehensive review that covers the BCI domain completely has been conducted yet. Hence, a comprehensive overview of the BCI domain is presented in this study. This study covers several applications of BCI and upholds the significance of this domain. Then, each element of BCI systems, including techniques, datasets, feature extraction methods, evaluation measurement matrices, existing BCI algorithms, and classifiers, are explained concisely. In addition, a brief overview of the technologies or hardware, mostly sensors used in BCI, is appended. Finally, the paper investigates several unsolved challenges of the BCI and explains them with possible solutions. | |