

**Brain Computer Interface (BCI)**

**Submitted in Partial fulfillment of Requirement for the award of the Degree of**

**MASTER OF COMPUTER APPLICATIONS**

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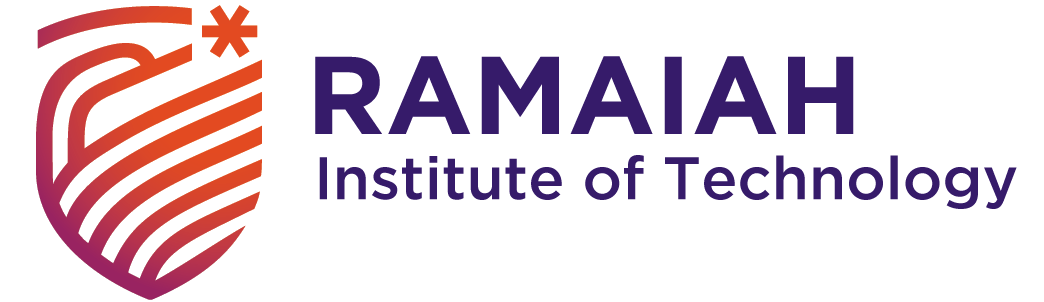
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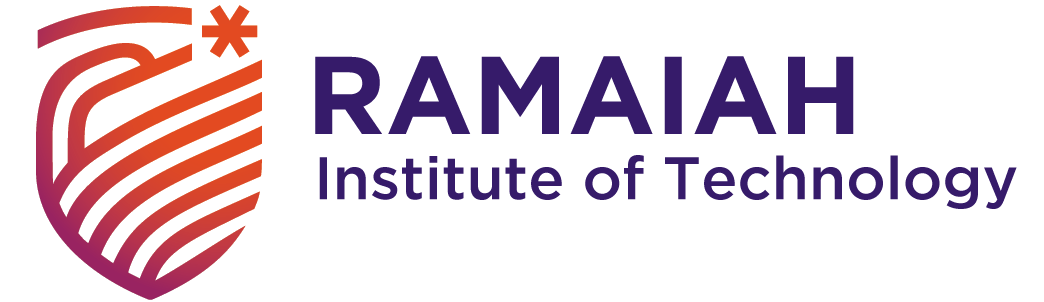
**CERTIFICATE**

This is to certify that the seminar entitled **“Brain Computer Interface (BCI)”** is carried out by **Pratim Dutta bearing USN: 1MS18MCA24**, a bonafide student of Ramaiah Institute of Technology, Bangalore, in partial fulfillment for the award of **Master of Computer Applications** of the Visvesvaraya Technological University, Belagavi,during the year 2020 . It is certified that all corrections / suggestions indicated for Internal Assessment have been incorporated in the seminar report deposited in the department. The seminar report has been approved as it satisfies the academic requirements in respect to seminar work prescribed for the said degree.

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Thanking You

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ABSTRACT

Brain Computer Interface (BCI) technology is a powerful communication tool between users and systems. It does not require any external devices or muscle intervention to issue commands and complete the interaction. The research community has initially developed BCIs with biomedical applications in mind, leading to the generation of assistive devices. They have facilitated restoring the movement ability for physically challenged or locked-in users and replacing lost motor functionality. The promising future predicted for BCI has encouraged research community to study the involvement of BCI in the life of non-paralyzed humans through medical applications.

Brain-computer interfaces (BCIs) acquire brain signals, analyze them, and translate them into commands that are relayed to output devices that carry out desired actions. BCIs do not use normal neuromuscular output pathways. The main goal of BCI is to replace or restore useful function to people disabled by neuromuscular disorders such as amyotrophic lateral sclerosis, cerebral palsy, stroke, or spinal cord injury. From initial demonstrations of electroencephalography-based spelling and single-neuron-based device control, researchers have gone on to use electroencephalographic, intracortical, electrocorticographic, and other brain signals for increasingly complex control of cursors, robotic arms, prostheses, wheelchairs, and other devices. Brain-computer interfaces may also prove useful for rehabilitation after stroke and for other disorders. In the future, they might augment the performance of surgeons or other medical professionals. Brain-computer interface technology is the focus of a rapidly growing research and development enterprise that is greatly exciting scientists, engineers, clinicians, and the public in general. Its future achievements will depend on advances in 3 crucial areas. Brain-computer interfaces need signal-acquisition hardware that is convenient, portable, safe, and able to function in all environments.

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