


Chapter 10

Patient Behavioral Analysis With Smart Healthcare and IoT

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ABSTRACT

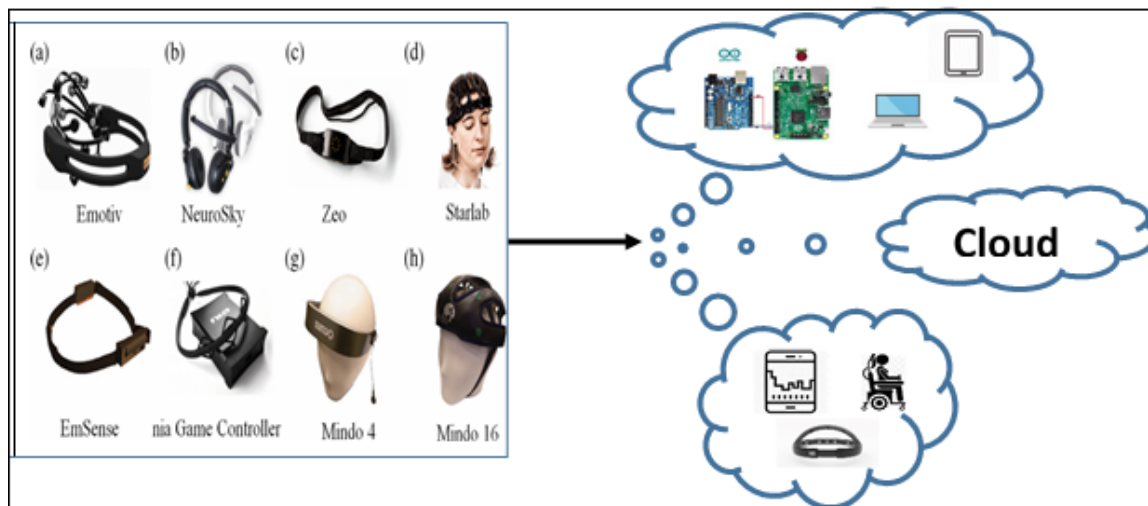
Consider a person with total mental capacity and an active lifestyle who can now not communicate or connect with the world around them due to a severe motor impairment to being locked into their body. Assume the person cannot notify their caregiver when uncomfortable or in distress. Caregivers dealing with locked-in patients must currently rely on their instincts, troubleshooting skills, and standard operating procedures to offer the best care possible. And with these safeguards in place, patients continue to suffer from needless rashes, illnesses, and deaths that should have been avoided. Modern technologies could significantly change this outcome and are being under-utilized in such healthcare environments. This chapter explores patient behavioral analysis with smart healthcare and IoT.

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INTRODUCTION

Integrating these advances into robust healthcare monitoring and communication systems could dramatically improve the quality of life for patients with locked-in syndrome. The purpose of this research is to analyze brain diseases using the Internet of Things. A machine learning model advances brain-computer interface (BCI) signal processing and shows the potential to improve the capabilities of mobile Internet of Things (IoT) devices. The device provides caregivers with up-to-date and relevant telemetry, enabling rapid intervention in the event of an emergency or emergencies. This allows for more credible accountability and improves data collection for the development of care. The device allows locked-in patients to interact with caregivers through a keyword-selection key interface.

Figure 1. Healthcare Information and Communication Technologies (ICT)



For several years, the healthcare industry has been implementing and deploying information and communication technologies (ICT) for successful healthcare administration, diagnosis, monitoring and controlling can be seen in Figure 1. Information and communication technology (ICT) helps a variety of health care professionals consult and advise patients, and also enables communication with far-flung resources. Most health care professionals can offer treatment or prescribe medication after physically interacting with a patient on an examination table. If doctors and medical professionals have infrastructure concerns, they can also take advantage of advances in information and communication technology (ICT) to see patients remotely. Recent advances in Information and Communication Technology (ICT) and the emergence of the Internet of Things (IoT) are creating new opportunities for research and discovery across all industries, including medicine and healthcare. For this reason, as per Mate (2020) hospitals have started using mobile devices for connectivity, leveraging the Internet of Things (IoT) and merging with small sensor nodes like Wi-Fi. Remote diagnosis is also possible and essential for some diseases such as Covid-19. ICT helps in remote monitoring too. As healthcare infrastructure advances, there is a greater emphasis on innovative systems for improving patients' lives with disabilities. In addition, the governments of such regions fund the welfare of their people, providing great opportunities for BCI's

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