

Automation of Traumatic Brain Injury Diagnosis through an IoT - based Embedded Systems Framework

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Abstract: *Traumatic Brain Injury (TBI) is a prevalent cause of death and disability with over 3.8 million annual cases and 130 daily deaths in the United States alone. Whenever athletes suffer head trauma, concussion field tests that measure their perceptiveness and cognitive abilities are commonly administered. To solve this, an expensive diagnostic helmet targeting youth sports teams was created, providing quantitative data regarding how much head trauma an athlete has experienced. The helmet is connected to a web-based application system that stores real time data regarding the impact of the head injury. The device and web application were programmed using JavaScript, HTML, CSS, and the Node.js platform in the Intel Edison IDE. This device therefore removes existing bias involved in diagnostics, allows doctors to more accurately handle injuries, and helps ensure player safety.*

Keywords: Traumatic Brain Injury.