△ **Altair**

Wearable IoT Technology Helps Combat Epilepsy

Overview

Epilepsy is a neurological disorder that affects 50 million people worldwide. Despite its prevalence, it can take years to correctly diagnose and treat. Once a patient is diagnosed with epilepsy, monitoring can be costly. It's typically done at medical facilities during brief electroencephalography (EEG) recording sessions, and those sessions can take months to schedule. Treatment costs are growing, and so are patients' unmet medical needs.

A Better Way: IoT and a Sensor Suit

A European technology leader in smart remote-monitoring medical solutions found a better way to diagnose and monitor epilepsy. It designed a suit-like device equipped with medical-grade sensors and used Altair SmartCore™, part of the Altair SmartWorks™ Internet of Things (IoT) suite, to collect data gathered by the suit's sensors and transfer it directly to healthcare providers.

The flexible, open-architecture SmartCore platform securely collects and analyzes biometric data in real time, and it's fully compliant with healthcare regulations. The system is designed to limit access only to patients and their medical teams.

The suit allows long-term tracking without high costs or burdens on patients. It reduces diagnostic errors — which are often a result of lack of data or misinterpretation of a limited amount of data — and helps patients receive fast and accurate treatment.

Evolving Through Machine Learning

Not only is the sensor-suit solution with SmartCore making it easier to combat epilepsy, it's using machine learning technology to evolve its own behavior. As the system learns about a patient using the data it collects, results become more accurate and are easier for healthcare providers to analyze and interpret. This allows doctors to identify and clinically validate digital biomarkers that are specific to patients or pathologies.

Improved Patient Care

This IoT technology has effected significant gains in the quality and efficiency of epilepsy care. The suit makes it possible for patients to be diagnosed more quickly and cost-effectively – and faster diagnosis means faster treatment. During clinical trials, the SmartCore platform can be customized to track large groups of patients in addition to individuals.

The Technology

Many medical-grade sensors are located inside the diagnostic suit, allowing it to collect data and transmit it to the SmartCore platform. That data collected is used to accurately diagnose epilepsy. SmartCore's IoT platform is used to host and transmit data sets collected from the suit.

Highlights:

The IoT sensor suit, in combination with SmartCore, collects data in real time to diagnose epilepsy. That data can be rapidly transferred to healthcare providers for faster diagnosis resulting in:

- Remote diagnostics
- Secured healthcare compliant hosting
- Precise pathological data set collection and analysis for clinical trials
- Collect, store, and analyze data from patient wearable devices
- Scalable to millions of devices

A Solution to Many Applications

Diagnosis   Monitoring   Clinical Trials
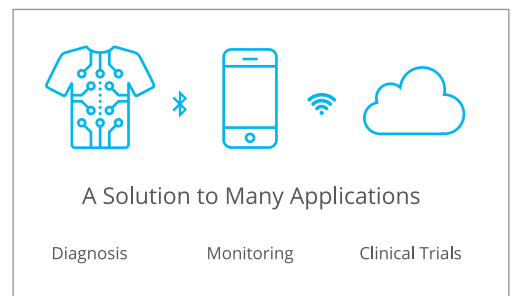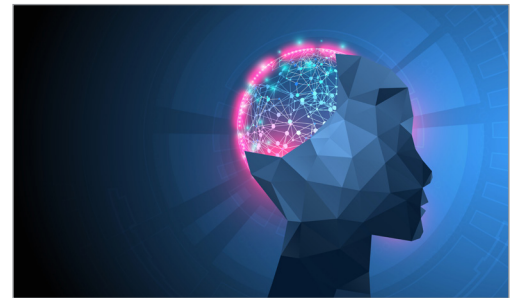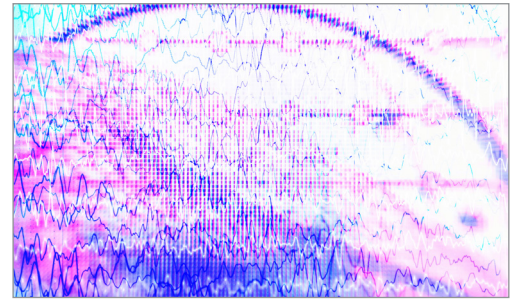
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