

A Wearable System for Real-Time Detection of Epileptic Seizures



e-Glass mock-up

Description

Despite recent advances in anti-epileptic drugs, one-third of the people with epilepsy continue to experience seizures. e-Glass is a new wearable system for real-time brain activity monitoring, leveraging edge-computing to account for several biomedical applications, including non-invasive epilepsy monitoring. By adopting advanced system design and machine learning techniques, e-Glass can reliably monitor brain activities continuously for more than 24 hours on a single battery charge.

Advantages

e-Glass presents up to four high-resolution EEG channels for high quality signal acquisition. Its eyeglasses form factor is key to reduce stigma on daily use while maintaining the electrodes/skin contact. E-Glass state-of-the-art hardware

is based only on off-the-shelf components, which allows easy industrialization and production scaling. The platform versatility allows implementing a diversity of algorithms, which can be helpful to trimming it for different applications based on real-time monitoring of brain activity.

Applications

- Epileptic seizure monitoring
- Cognitive Workload Monitoring
- Brain-computer interface

Ref. Nr

6.1828

Keywords

Brain Activity Monitoring, Epilepsy, Seizure Monitoring, Machine Learning, Wearable Device.

Intellectual Property

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Publications

2018 IEEE International Symposium on Circuits and Systems (ISCAS)
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IEEE Transactions on Biomedical Engineering (Vol: 69, Issue: 1, Jan. 2022)
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