

A deep learning-enabled wearable throat interface

Monitors breathing and sleep patterns and converts non-vocal signals into audible conversation

Technology

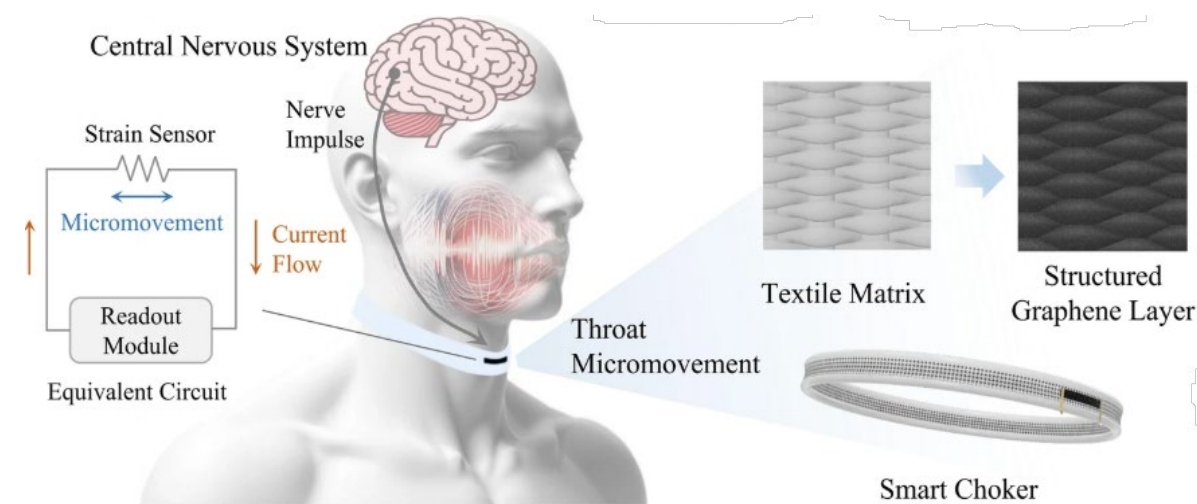
A multi-channel textile-based strain sensor which, when combined with a deep learning model, can monitor vibrations from the throat area to detect sleep conditions and decode silent speech.

Benefits

- Small and comfortable form factor with no need for hospital recovery; textile construction aids washability, breathability and skin compatibility – pre-requisites for long-term usage.
- Can classify both nasal and oral breathing when monitoring sleep.
- The strain sensor array is ultrasensitive allowing even silently mouthed words to be converted into speech.

Commercial applications

- Monitoring sleep patterns and diagnosing sleep-related disorders such as insomnia and apnoea.
- Aids individuals with temporary or permanent speech impairments
- Can be integrated into wearable tech, such as devices for continuous health monitoring and smart garments.



Vibrations arising from micromovements in the throat are captured by a strain sensor integrated into a smart choker, comprising a textile substrate with an overlying structured graphene layer.

Opportunity

We are seeking partners to help co-develop and / or license this technology.

For further information please contact: Mei.Hong@enterprise.cam.ac.uk