بِسْمِ اللهِ الرَّحْمٰنِ الرَّحِيمِ

STUDEMETER

Empowering Education Through Insightful Engagement

Project ID
620

Under Supervision of
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Team Members
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What is the problem?

- Egypt ranked 133rd out of 141 countries in the **quality of primary education** according to the *2021-2022 Global Competitiveness Report.*

- Egypt has implemented several initiatives to **monitor student progress** and engagement in the classroom. These include digital attendance systems and the use of learning management systems.

- **Quality assurance efforts** include training programs for educators, regular evaluations of educational institutions, and the development of quality benchmarks.

Monitoring students' attention in China

Why the Chinese device is not good?

- EEG is too **expensive** to obtain.

- EEG is **unsuitable** for long-term wear on the head.

Examples of wearable EEG devices

A good alternative is GSR Sensor

- A physiological sensor used for measuring emotions and in lie detection.

- Easy to manufacture at a **low cost**.

- **Suitable for wearing** on the hand.

Papers on how to measure student engagement (attention) using GSR

1. Physiological Measurement of Students' Engagement in Distributed Learning Environments

2. Wearables for Engagement Detection in Learning Environments: A Review

3. Review of Approaches for Assessing Student Attentiveness in Classrooms Using Behavioral Elements
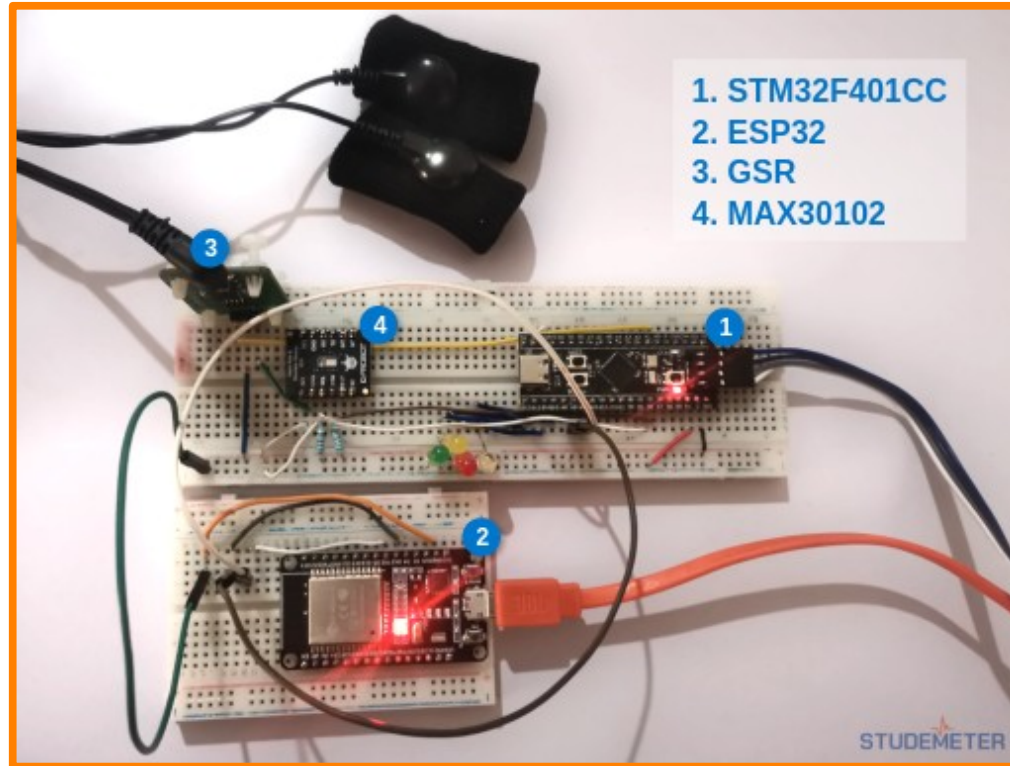
What is the benefits of this project?

- Enhancing student attention monitoring in class.
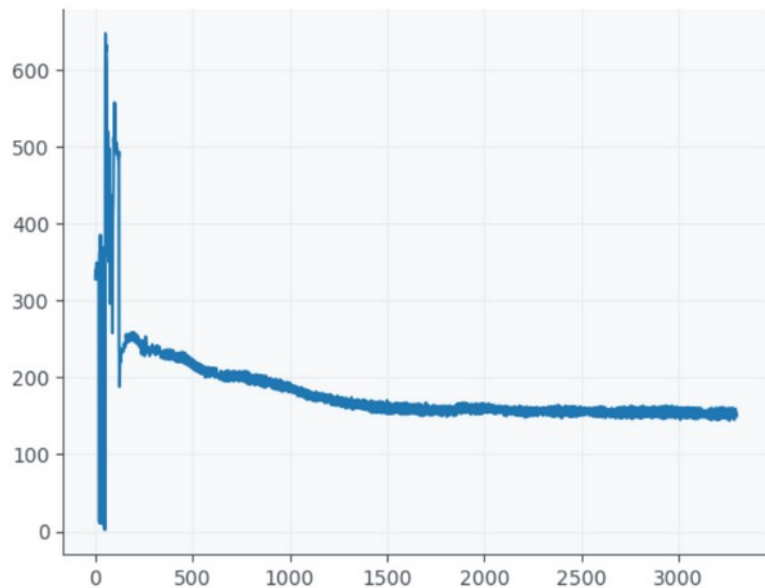
- Improving quality assurance for teachers.
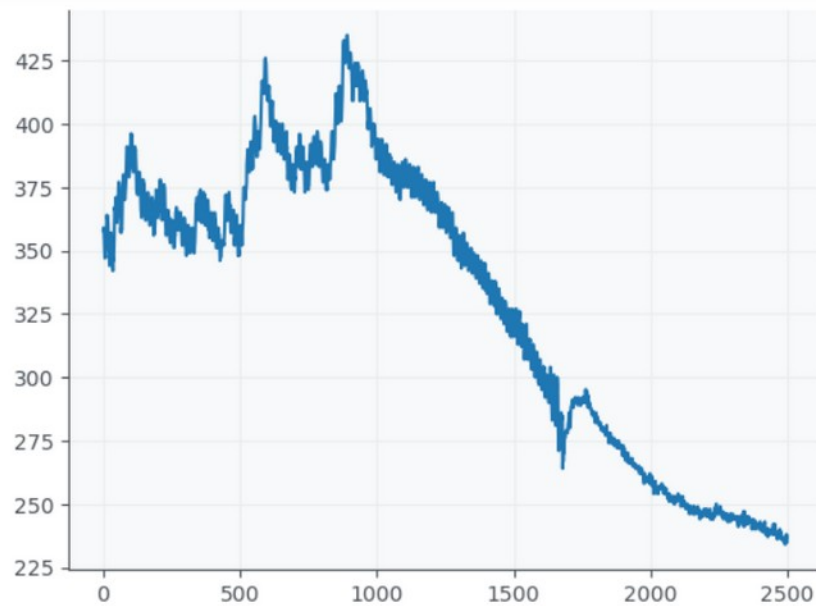
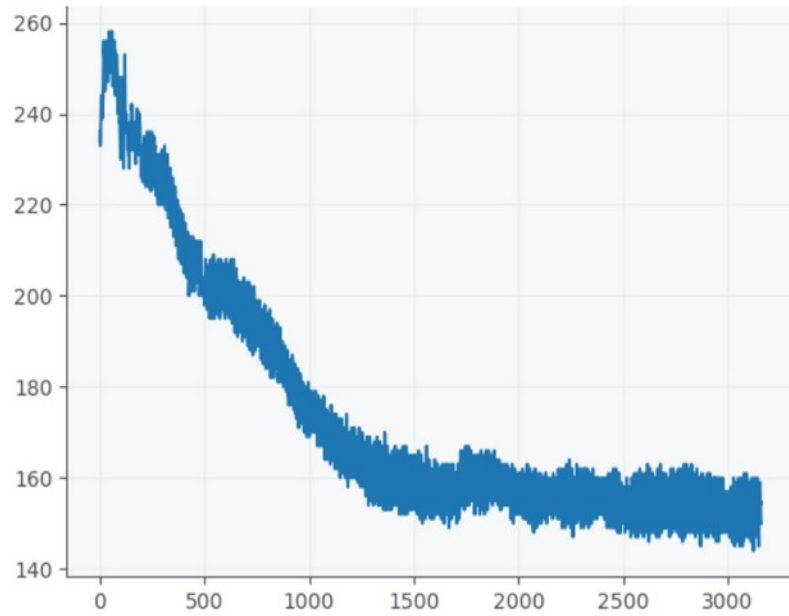# A prototype of student device
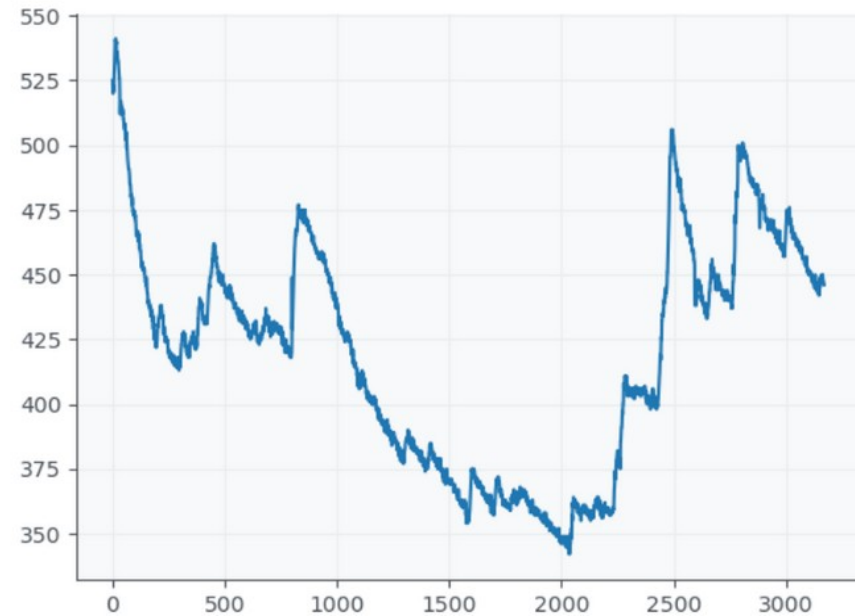
GSR Signal

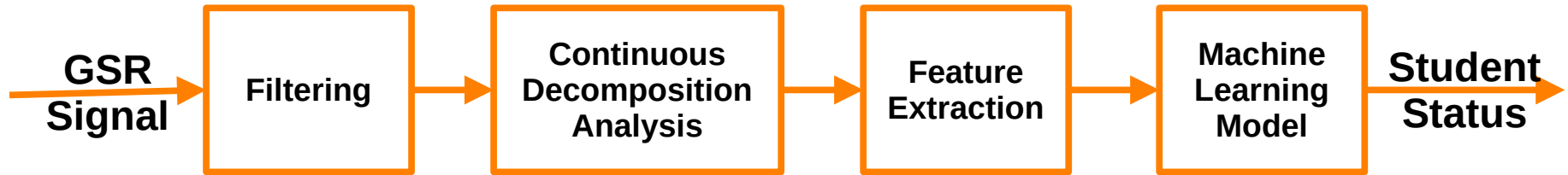- **Attention**

- **Distraction**

GSR Sensor

- **Attention**

- **Distraction**

Project Block Diagram

GSR Signal → **Filtering** → **Continuous Decomposition Analysis** → **Feature Extraction** → **Machine Learning Model** → Student Status

A prototype of teacher UI

👤 **مرحبا استاذ محمد**

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كود الطالب	اسم الطالب	الحالة
123001	فلان الفلاني	غائب أو غير متصل
123002	فلان الفلاني	**مشتت**
123003	فلان الفلاني	استيعاب عالٍ
123004	فلان الفلاني	استيعاب جيد
123005	فلان الفلاني	**غير منتبه**