

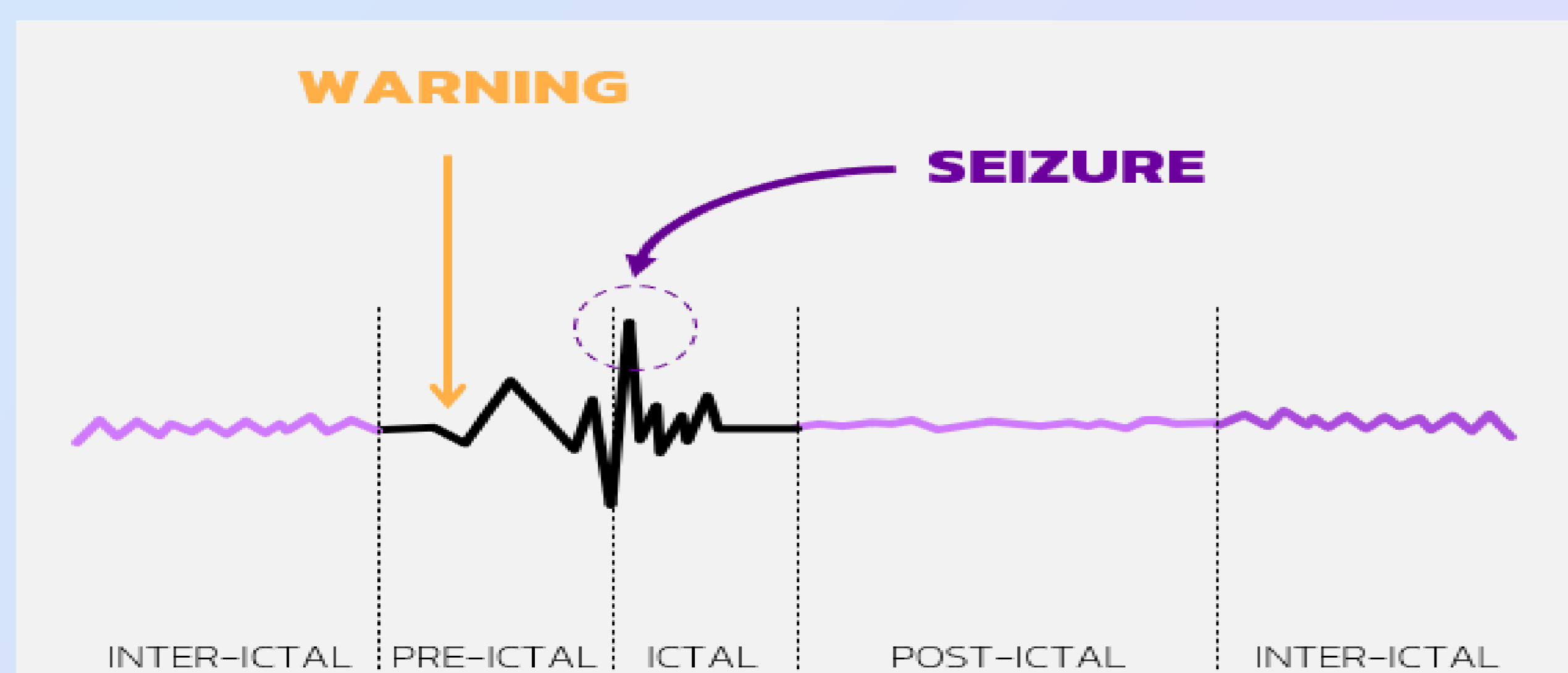
Artificial Intelligence technology for seizure forecasting

PROPOSAL

Artificial Intelligence (AI)-based systems hold the potential to create applications and **digital solutions** for patients but also generate paradigms for proper support in healthcare.

Epilepsy seizures forecasting has been studied for several years, but it is still a **challenge**.

Our proposal is to detect small brain activity changes, in **pre-ictal** periods, to perform **seizure forecasting**.



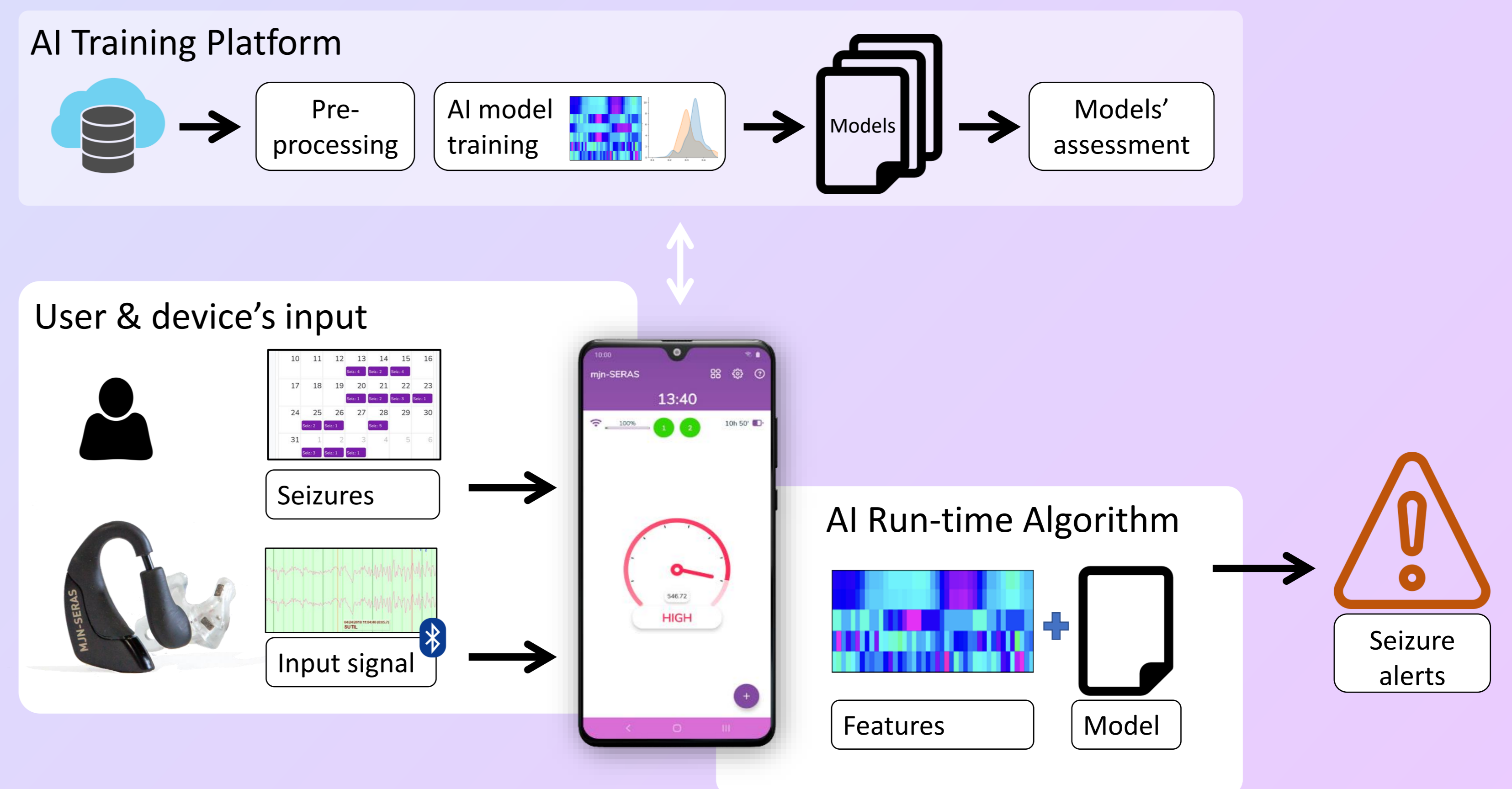
METHODOLOGY

Our **wearable device** sends continuous data to the **mobile application** where it is analysed by AI algorithm.

At the same time, it is sending data to **cloud servers** to perform our **machine learning training** process.

Once data is processed, we can generate **several** plausible **patient-specific** models.

Finally, all generated models are assessed and the best ones are selected and updated in the **mobile application**.



MJN AT A GLANCE

The data obtained in the project are:

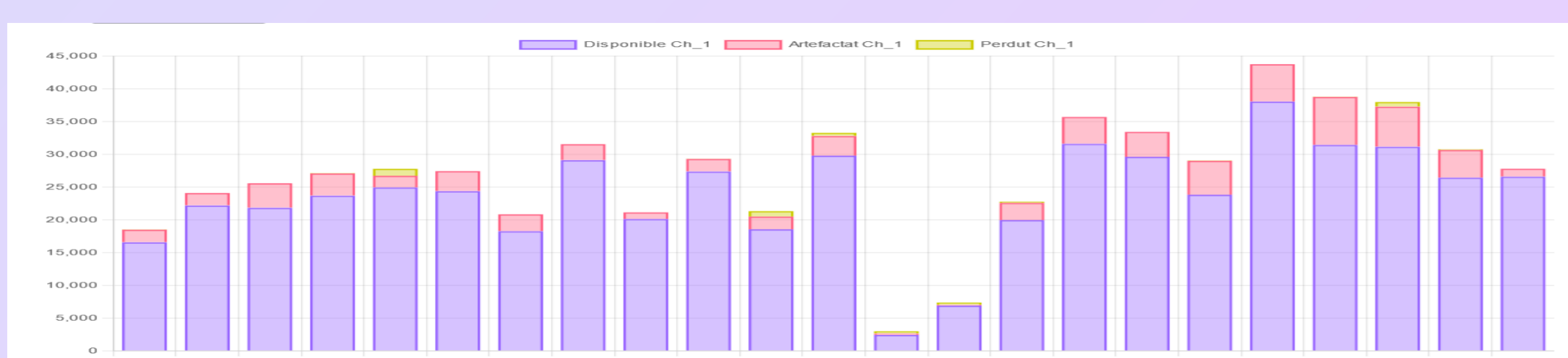
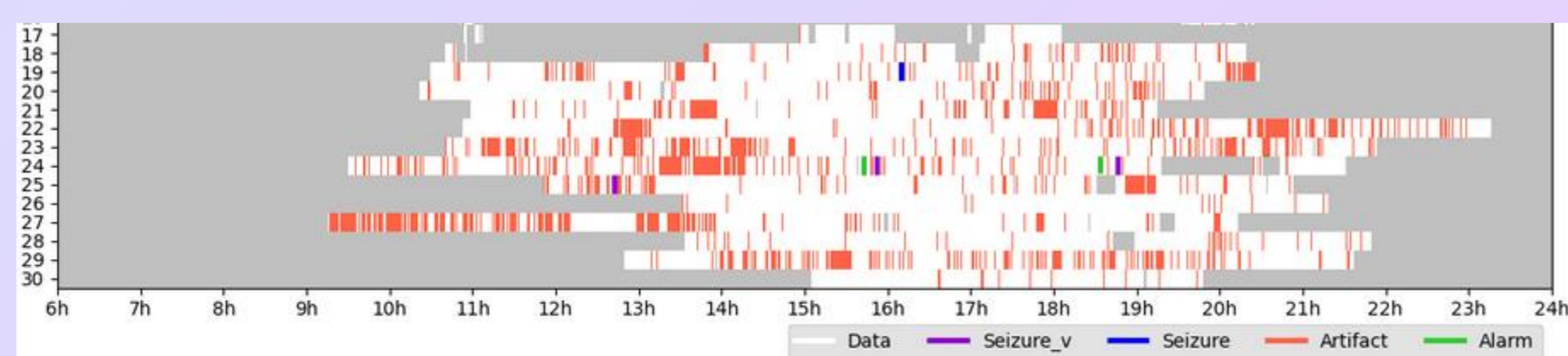
32,550 hours
of EEG recordings
analysed

457 average
hours per
patient

1,806 seizures
captured and validated

815 seizures
training AI models

And a continuous monitoring of patients:



CONCLUSIONS

Epilepsy has a **severe impact** on patients because of unexpected seizures, generating anxiety, depression, few social relationships and **low quality of life**. Going forward into seizure forecasting should help in the prevention of accidents and injuries, and, in future, with appropriate rescue medications.

Machine Learning techniques allow the use of specific features and characteristics to benefit the AI **explainability** and the capacity to understand why the system reached a particular decision.

AUTHORS

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