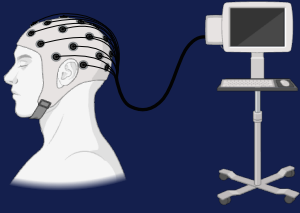


Time Series & AI in Healthcare Research

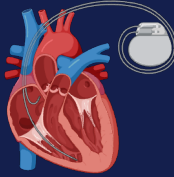
Explore how data collected over time is transforming healthcare!

Time Series Data

There are many types of time series data:

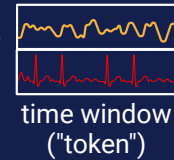
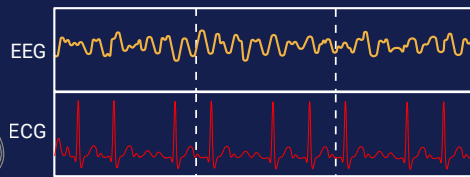


electroencephalogram (EEG), which records brain waves



electrocardiogram (ECG), which records the heart's electrical activity

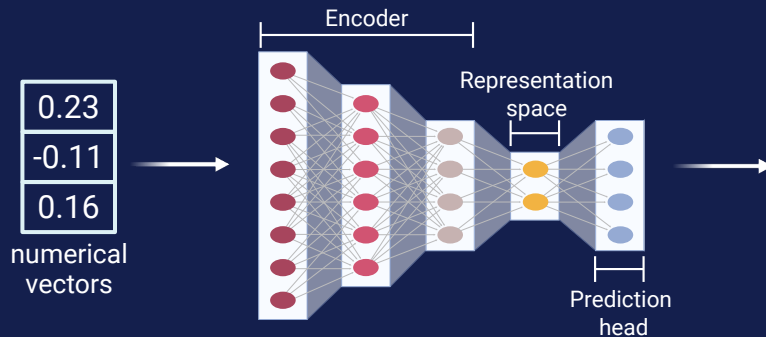
Signals



Splitting EEG and ECG signals into short time windows ("tokens"), converting them into structured numerical units that models can understand

AI Models

AI models learn patterns from time series tokens to predict outcomes



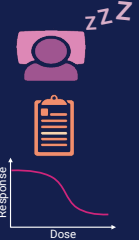
Representations capture meaningful patterns in the data

Downstream Tasks

Sleep Staging

Disease Prediction

Disease Monitoring



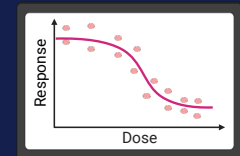
Improving health outcomes

Doctors + AI together can

Detect seizures minutes before onset and treat focal epilepsy

Track seizure patterns over time to assess intervention effectiveness

and much more!



Want to see this in action?

Explore our **interactive notebook**:

<https://tinyurl.com/5bzmf8v2>

(open with a laptop)

or

video: <https://tinyurl.com/au87rakx>

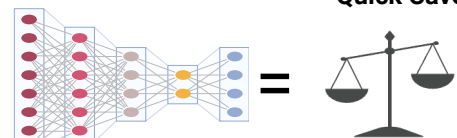
to see how an AI model tokenizes, represents, and decodes sleep physiological signals to classify sleep stages, helping improve the diagnoses of sleep disorders!



video



Quick Caveat!



AI predictions are not perfect; errors and biases can occur with poor data or underrepresented groups