Predicting Coma Recovery With Machine Learning of Multimodal Data

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Patients exhibit similar external features

600K people experience cardiac arrest in the US every year.

80% of people who are resucitated from cardiac arrest are **comatose.**

all comatose patients exhibit the **same** external features

Patient journey

Patient arrests

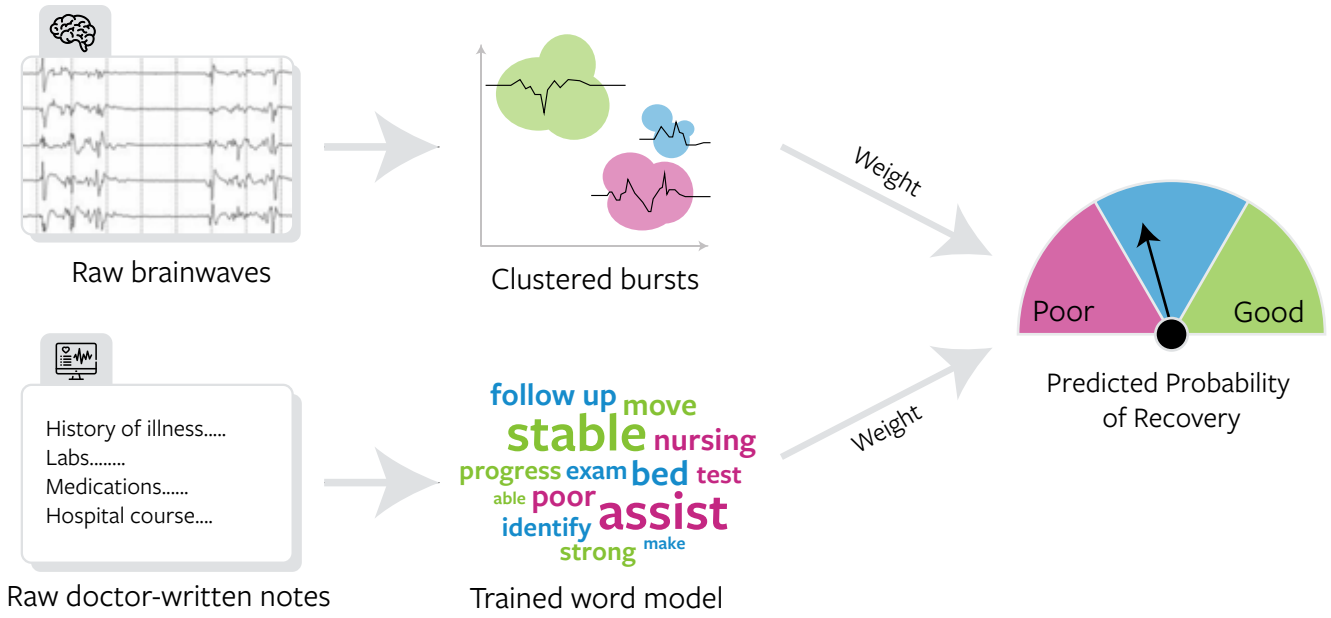
Lack of oxygen causes brain damage that leads to coma

CPR, heart beats again

Patient to ICU

ICU doctor makes treatment decisions

Two machine learning approaches facilitate recovery predictions



We are deploying a model trained on historical patients' **neurophysiological data** and **doctor-written notes** to predict the likely recovery outcome of new patients. The prediction is a **decision support tool** that helps physicians make **earlier** treatment decisions to help patients reach a higher level of functional independence post-coma. Using Python, we **cluster** the similarity of brainwave patterns and use **natural language processing** to correlate keywords in patients' notes to their most likely recovery outcomes.