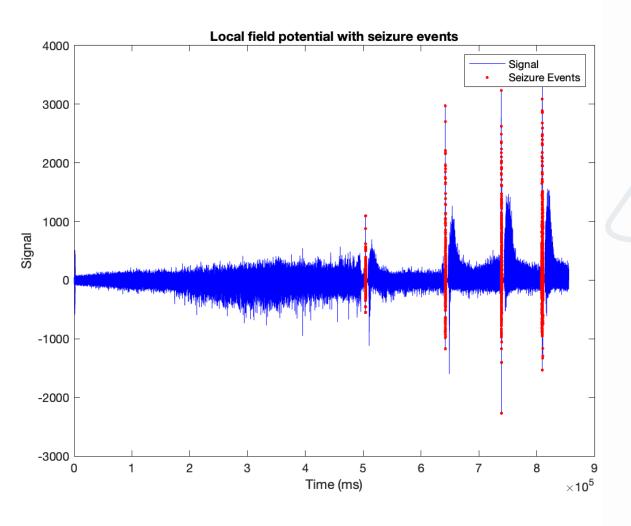
## Automated epileptic seizure detection



- Over 65 million people have epilepsy worldwide (Mehndiratta & Wadhai, 2015).
- 30%-40% of patients continue to have recurrent seizures despite treatment with anticonvulsants (Laxer et al., 2014).
- Not knowing when a seizure will occur can pose clear physical, social and mental risks.
- I have used MATLAB to build a LSTM machine learning model to automatically detect and classify seizures.
- Large amounts of in-vivo data collected from epileptic and control animals has been used.
- A successful model could provide benefits for epilepsy patients, healthcare services, and the economy.

## Seizure events 5000 Model performance Signal Seizure events Output Training output -5000 3 6 Time (ms) $\times 10^5$ Predicted seizure events 5000 Predicted seizure events Signal Signal Predicted Events Predicted Events Output 40 epochs 20 epochs -5000 -5000 6 Time (ms) $\times 10^5$ $\times 10^5$ Time (ms) Predicted seizure events 5000 Predicted seizure events Signal 5000 Predicted Events Signal Predicted Events Output Output 30 epochs

-5000

3

Time (ms)

6

50 epochs

2

Time (ms)

-5000