**Improved Spatio-Temporal Modeling in Automated Seizure Detection using Channel-Dependent Posteriors**

Seizure detection in scalp electroencephalograms (EEG) is a challenging problem and relies heavily on long-term spatio-temporal context (e.g., the history of events and background morphologies of the signals). Recurrent neural network architectures such as long short-term memory networks are unable to learn these long-term dependencies. A two-pass model is introduced that estimates epileptiform features for individual channels in the first pass and temporal-spatial context in the second pass. Embedding the history of detected events into the second-pass model improves the stability of the model. This new model increases sensitivity to 40.29% while maintaining an extremely low false alarm rate: 5.77 false alarms per 24 hours. These are the best published results to date on this seizure detection task.