EEG Denoising in a Passive Hybrid BCI with Deep Learning

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- **Objective:** Improve P300 signal classification in the presence of muscular artifacts
- Obtain pre-processed EEG data and ground truth from partner labs’ phase 1 data sets
- Use autoML code to determine optimal layers, nodes, and iterations for neural network as well as most accurate activation functions & solvers
- Train neural network to classify “target” vs “standard” samples
- Evaluate model using ROC AUC, f-score, confusion matrix
- Derive method to filter out the artifacts by comparing evaluation metrics for clean vs noisy data
- Re-train neural network and see if accuracy improves