# Creating custom models to help study participants communicate yes vs no answers using a brain-computer interface

# In my capstone I will seek to match or exceed the model performance in a recent BCI study

| Considerations | Detail |
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| Problem Statement | Can I construct a custom model for each of nine study participants with significant central nervous system damage which can predict with more than 70% accuracy which of two things they are thinking about – and thus which can be used as a yes/no classifier to help them communicate? |
| Potential Audience | Potential employers in the BCI space; BCI researchers |
| Goals | Select the best pair of thought patterns (from five options) to use as yes/no classifiers for each participant and then construct a custom model to correctly predict which of the two tasks they were thinking about. |
| Success metric | To match (or exceed) the predictive ability of the models created by the researchers |
| Data source | The data from this study is available publicly online – already downloaded in .mat format |
| Original paper link | https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4436356/ |

Discarded options that made my shortlist in case needed in future: https://lampx.tugraz.at/~bci/database/001-2019/dataset_description_v1-1.pdf, http://doc.ml.tu-berlin.de/bbci/BNCIHorizon2020-CenterSpeller/BNCI_CenterSpeller.pdf, https://archive.physionet.org/pn4/eegmmidb/, https://www.nature.com/articles/s41598-019-43594-9,