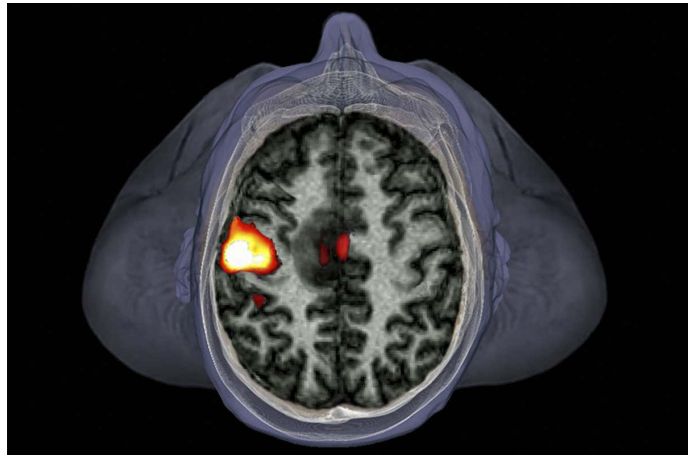




Decoding Brain Activity

Brain decoding is the process of mapping brain activities to the stimuli that generated them. In the case of language stimuli, recent studies have shown that it is possible to decode fMRI scans into an embedding of the word a subject is reading. However, such word embeddings are designed for natural language processing tasks rather than for brain decoding. Therefore, they limit our ability to recover the precise stimulus. In this thesis, we aim to directly classify an fMRI scan, mapping it to the corresponding word a subject was thinking about. In essence we aim to do mind-reading.

Unlike existing work, we want to evaluate on scans from previously unseen subjects. We argue that this is a more realistic and applicable setup. The tools we work with will be neural networks. As this is a follow-up thesis, a model with code is already given as a starting point. In this thesis we aim to improve this neural network and understand better the inter-subject brain patterns. For example, are some subjects more similar to each other than others?



Requirements: Prior experience with pytorch. We will have weekly meetings to discuss questions and new ideas.

Interested? Please contact us for more details!

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