Abstract

Mind reading or thought prediction is a promising application of functional neuroimaging studies. The emergence of functional magnetic resonance imaging (fMRI) has, in the last two decades, given a boost to these studies. In order to improve the accuracy, predictability and repeatability of thought prediction, it is important to have a representation that can capture the nuances of fMRI activations with respect to a particular cognitive state. In this paper, the process of creating a geometrical representation of the activations using non-linear manifolds is described. Manifold learning brings out the geometry of the activated voxels in the fMRI image. It is shown that this kind of representation is able to give high accuracy in classification studies as compared to using activation profiles.

References

- Nancy Kanwisher, Josh McDermott, and Marvin M Chun. The fusiform face area: a module in human extrastriate cortex specialized for face perception. The Journal of
Decoding Multiple Subject fMRI Data using Manifold based Representation of Cognitive State Neural Signatures


**Index Terms**

Computer Science  
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Keywords
fMRI classification multiple-subject manifold learning