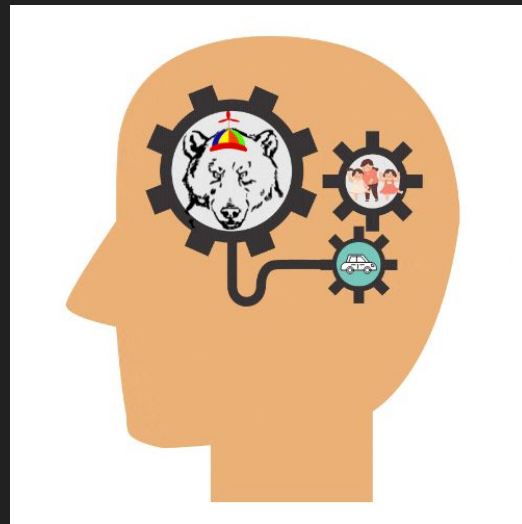
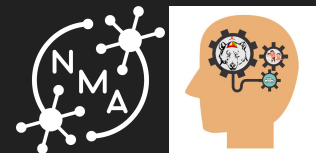


# Semantic Representation of Human vs Vehicles in the Brain



By: Jon McGill, Atharva Kand, Ceri Ngai, Ernest Kirubakaran Selvaraj  
(aka Scholarly Bears)

# Research Questions & Approach



Humans are usually able to differentiate between *animate* and *inanimate* objects in everyday life (cf. Huth, Nishimoto, Vu, Gallant, 2012)

## Questions

1. How are these different categories of information represented in the brain?
2. Which region(s) of the brain might be responsible for distinguishing between humans and vehicles?

## Dataset

- Algonauts 2021

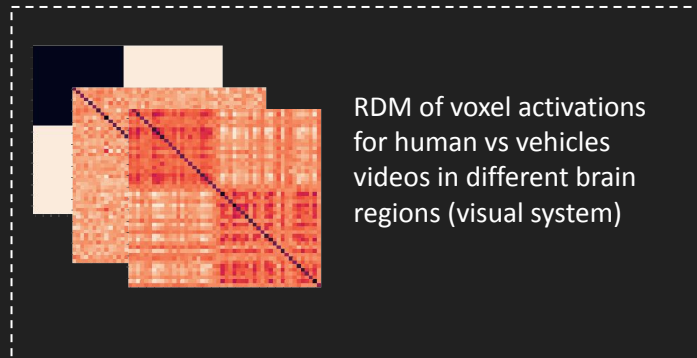
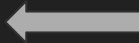
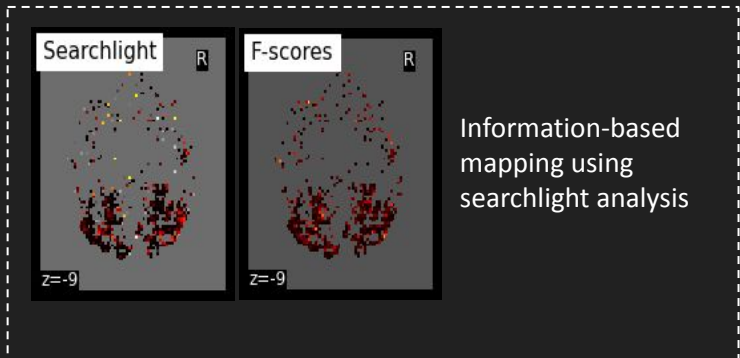
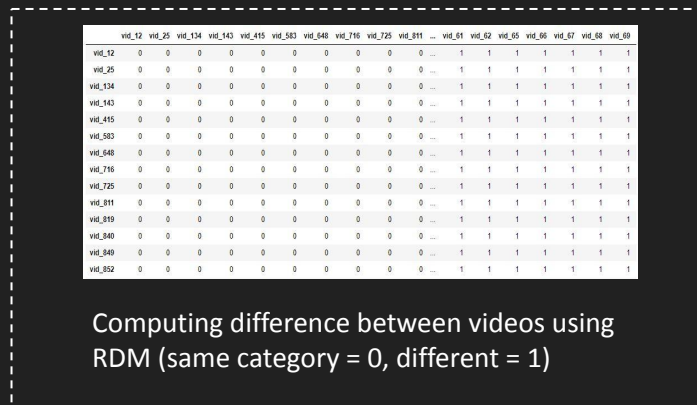
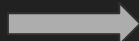
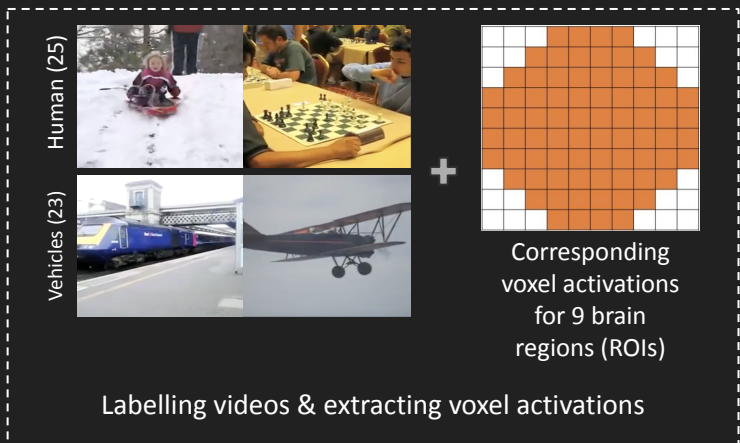
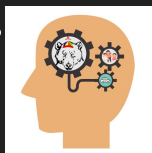
## Approach

1. **Data:** labelling humans VS vehicles videos from Algonauts dataset
2. **RDM:** computing the difference between humans & vehicles video
3. **RSA:** exploring correlations between RDM & 9 brain regions
4. **Searchlight:** localising brain regions that help discriminate humans & vehicles

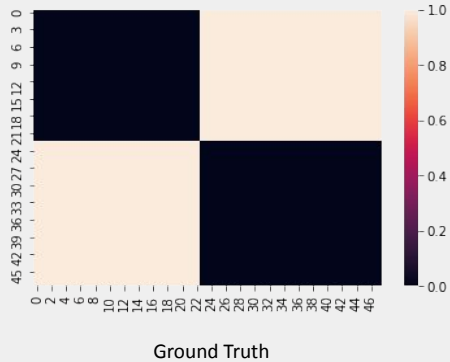
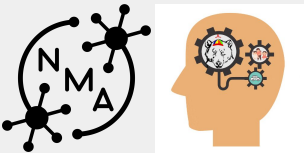


Algonauts Challenge Dataset 2021

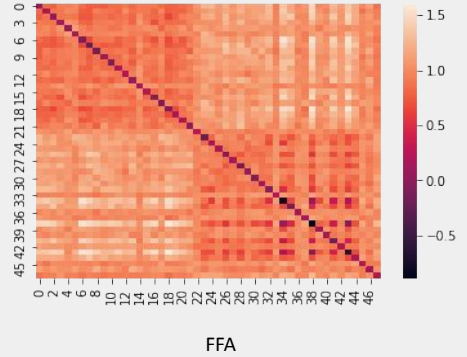
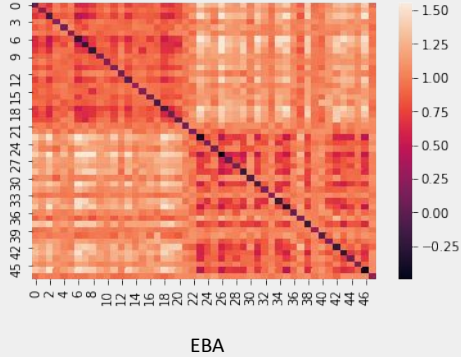
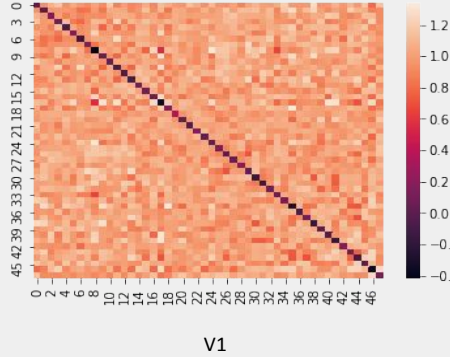
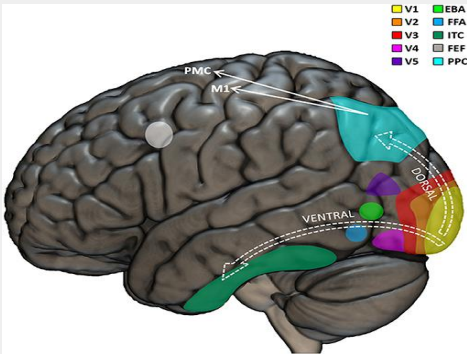
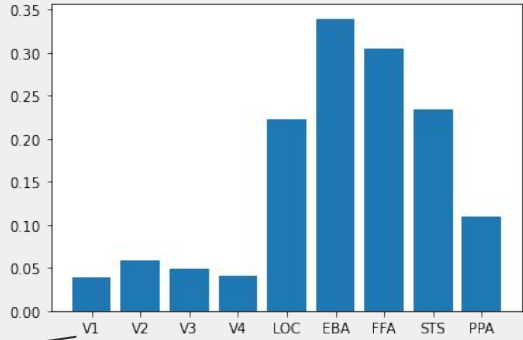
# Methodology

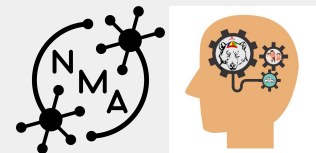


# Results and Conclusion



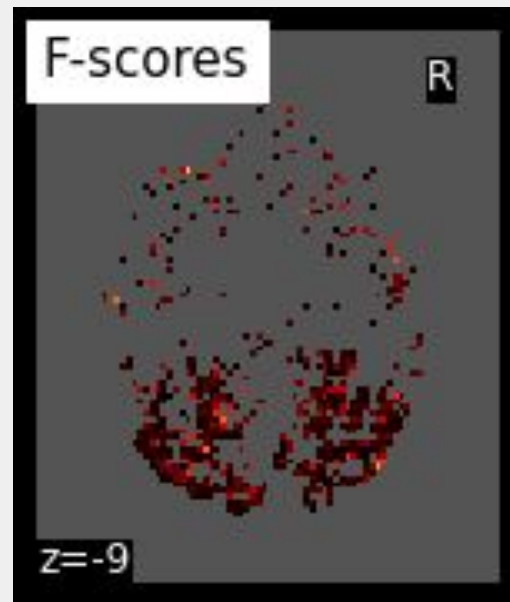
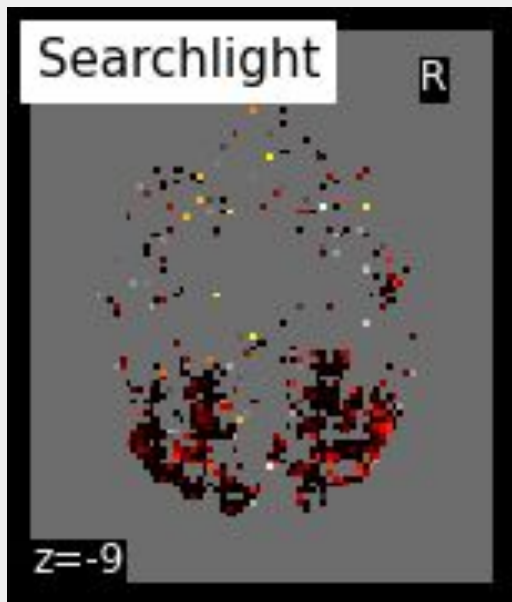
Mean correlation for different regions across subjects



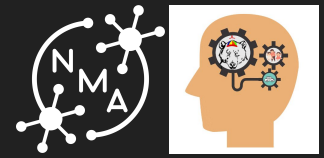


# Results and Conclusion

Searchlight results for the whole brain region



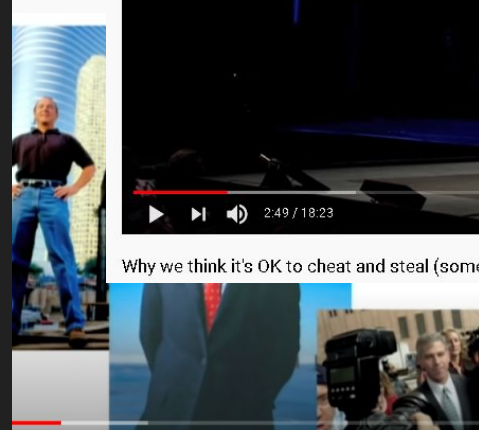
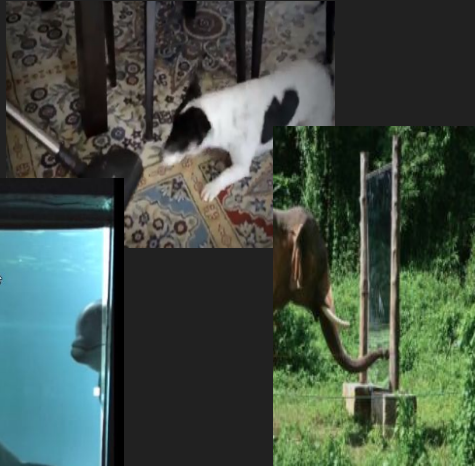
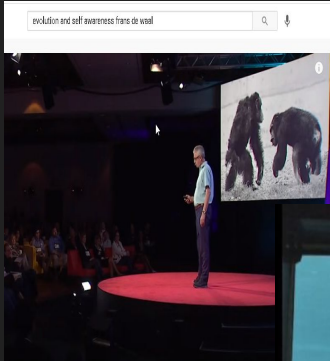
Code: <https://github.com/ernest-s/Neuromatch-ScholarlyBears>



# Future Directions

How questions - Semantic Priming

Why questions - Cognition and evolution of the Human Brain



Why we think it's OK to cheat and steal (sometimes) | Dan Ariely





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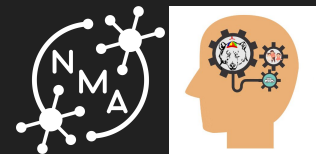
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