Thesis

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1 Introduction

2 Background

3 Experimental Protocol

3.1 Behavioral Task

4 Feature Selection

4.1 Scalogram

4.1.1 Continuouse Wavelet Transform

4.2 Anatomy of Covert Speech

4.3 Source Reconstruction

Apparently you can't just eyeball it...

4.4 Sensor Selection

4.4.1 Strategies Exlored

Absolute AUC - got whacky results PCA - are they really iid? Looking at scalogram differences might just be the best option (that's what the post doc did for her beta stuff, no?). Just take squares of that until it's not actually dimensionality reduction anymore.

5 Vision Models

5.1 Convolutional Neural Networks: AlexNet

Because this is what got Dash et al. the best result in their paper. Also, using CNNs has been done by other people as well.

5.2 Vision Transformers: Google-base

There is growing interest in using vision transformers, as well as other models, but specifically vision transformers for medical imaging. Although, this is generally done for MRI and in autism for some reason - I guess this is where there is the most data probably. In any case, there are citations.