**README**

**Reading in Existing Data**

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**Prelude:** Contains MATLAB scripts for extracting existing data provided by Luke Hallum into images and an organized file structure that can be interpreted by tensorflow. A link to this data can be found on the following google drive for reference or download (https://drive.google.com/drive/folders/1szKk69YlkZZxvbV33aNGMd7VrNlqDKHh?usp=sharing). This data was given as an initial ground for testing, however, because there was not enough data in this subset, our own data was generated. This data was not used much for training models.

The most important files in this folder are the **GeneratingTestDataFromLuke** which can be used in the future to transfer data from the google drive to new images that can be used for training. Many of the other functions have a more up to date version in Generating datasets, and it recommended that this is used instead.

**File Structure:**

An overview of the file structure is included below:

* **Image Data:** Images from the google drive organized into a singal/nosignal file structure, ready to input into TensorFlow.
* **NewImageData:** Contains user labelled information from GenerateNewData which can be used to input into tensor flow; this method of generation is obsolete as a better version is presented in Generating Datasets
* **Stimuli:** Raw files from the google drive stored locally.
* **createFullGabor:** Function which creates a full 8x8 array of Gabor patches with margins, as used in the training data.
* **createSingleGabor:** Function which creates a single Gabor patch (used in creating the full array of images)
* **GenerateNewData:** Script which generates new data and prompts the user to label whether there is a signal present. This can be used to create datasets, however there is a more updated version in Generating Datasets.
* **GenerateRandomDataset:** Function which generates a random dataset containing a signal.
* **GeneratingTestData:** Small trail script for generating test data from Gabor patches.
* **GeneratingTestDataFromLuke:** Script which transfers the .tar files on the google drive given by Luke, to images organized into a file structure, ready for input into CNNS/
* **pilot\_analysis:** Script provided by Luke which brakes down the datasets provided on the drive. Better to use GenerateTestDataFromLuke script.
* **SmallAnalysis:** Condensed version of pilot\_analysis with more commenting.