Readme

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The code is for Vocal separation project for CS591 Compressive sensing. It contains 3 folders: code, ODL_code and data.

For folder code, it contains code for our first attempt to solve the problem by pseudo inverse. It is just an experiment and has nothing to do with our presentation.

For the folder ODL_code, it contains the codes for using online dictionary learning method in frequency domain and compressive sensing to solve the separation problem.

For the data, it contains all the training and testing data. But since the data set is too large (20 Gb), we only left our testing data and learned dictionary in it.

And below we are going to introduce how to use the code. Our code contains two parts, the dictionary training part and the separation using compressive sensing part. Bur since there is no training data included in this submission, we can't use the training code to see the result. (actually it takes 40 hours to learn all dictionary). The runnable code is the separation part. For the separation, try to use the m file named 'seperationsolver2', this is an improve method and we greatly reduce the dictionary size or the dictionary size will be 5 GB. In the program, just set the dictionary path (it is stored under 'data' folder) and the writing path, and it can generate the separation result to you. The result is not so good, but still it spate some of the instrument out.

Thank you for your reading.