**Programming Assignment 5**

EE548: Matrix computations for signal processing

Due date: ~2023/06/06, 23:59

1. Introduction

In this assignment, you will implement QR factorization based on Householder vector and Givens rotations. For detailed requirements, please follow the comments in the MATLAB file. The parts of the code you need to implement are marked in comment as ‘Write down your code in the following block’. We recommend to refer to lecture materials for implementations.

1. Specifications

Files:

* *givens.m, GivensQR.m*: Your custom functions for computing the Givens rotations and QR factorization based on Givens rotations.
* *house.m, HouseholderQR.m*: Your custom functions for computing the Householder vector and QR factorization based on Householder vector.
* *HessenbergQR.m*: Your custom functions for computing the QR factorization for the upper Hessenberg matrix based on Givens rotations.
* *test.m*: Check the difference between the result of your custom functions and the true value in L2 norm. You should submit the result of this code. Do not modify this file

1. Submission
2. Explain your answer with a single pdf file, which should include follows:
   1. Code implementation
   2. Screenshot of *test.m*’s result
3. The final submission would be a single zip file containing a single pdf file and all the matlab files. The name of the zip file should be ‘ID\_name.zip’, e.g. 20223303\_SeoungbinBae.zip