**Programming Assignment 4**

EE548: Matrix computations for signal processing

Due date: ~2023/05/23, 23:59

1. Introduction

In this assignment, you will implement various solvers for a Toeplitz system and a Vandermonde system. 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’.

1. Specifications

Files:

* *Toeplitz.m, Vandermonde.m*: Your custom matrix generation function, each corresponding to a Toeplitz matrix, and a Vandermonde matrix.
* *Durbin.m, Levinson.m, Trench.m*: Your custom solvers for a Toeplitz system. We recommend to refer to the lecture materials for implementing the code.
* *VTsolve.m, Vsolve.m*: Your custom solvers for a Vandermonde system. We recommend to refer to the lecture materials for implementing the code.
* *test.m*: Check the difference between the result of your custom solvers 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