EEC 266 - Project code (README)

Files included

- main.m
- compressed_sensing.m
- sensing_matrix_method.m
- normalized_value.m
- algo_omp.m
- gen_bch_matrix.m
- generate_singer.m
- generate_macfarland.m

Execution

The entire project is run by running `main()` without any arguments.

Structure

- **main.m**
  This function is the main function and once called, will call the rest of the defined function to output the required graphs
- **compressed_sensing.m**
  Function to perform compressed sensing and to plot out all the required graphs
- **sensing_matrix_method.m**
  Function to recover the output matrix from the input signal and the sensing matrix.
- **normalized_value.m**
  Function to normalize the graph outputs. This function is used to compensate for the lack of tests (for computational and time reasons). It normalizes the output and ensure that the plot does not deviate a lot (which would usually be normalized with more tests)
- **algo_omp.m**
  Function algo_omp solves y = Ax, takes the input parameters y, A, k where y is the output field, A is the dataset field and k is the sparsity. It returns the solution of x.
- **gen_bch_matrix.m**
  Function to generage bch matrix
- **generate_singer.m**
  This function returns a singer matrix of order pxp^2 that satisfies the RTP with specified values for k, t, delta.
- **generate_macfarland.m**
  Function to generate the Macfarland matrix