

# Wireless Network (CSE/ECE 538)

## Assignment 4

Maximum Marks: 15

### Submission Instructions

- Prepare a report with all necessary output.
- Submit your code
- Naming convention should strictly be A4\_FirstName\_RollNo.tar.gz

### Introduction

The objective of this assignment is to check the engagement of listeners in online meetings using WiFi signal. The listeners connect to online meetings through WiFi. The idea is to perform sensing using WiFi Channel State Information (CSI). In this assignment, we will use CSI of WiFi signals and monitor the engagement level of the listeners by analyzing listeners' head movements. The following are exercises in the assignment.

Note: The necessary code and dataset are available in the following link. <https://drive.google.com/drive/folders/14x8-1yktG7pfZl8YRVzg61eqWxW72b4v?usp=sharing>

### Exercises

1. Compute amplitude from the raw CSI data. [2]
2. Find the optimal values for denoising filters. [3]
3. First visualize the raw CSI amplitude and then after each processing and denoising step. [4]
4. Make appropriate dimension of input data for trained model. [3]
5. Correctly compute the engagement score.[3]