

Department of Electrical and Computer Engineering
The Johns Hopkins University
520.648 Compressed Sensing and Sparse Recovery – Spring 2018

Homework Assignment III

Reading Assignment: Lecture Notes, OMP, SP, CoSaMP

Computer Assignment: Sparse Signal Recovery via Matching Pursuit.

1. Implement 3 matching pursuit algorithms as discussed in lectures: Orthogonal Matching Pursuit (OMP), Subspace Pursuit (SP) and Compressive Sampling Matching Pursuit (CoSaMP).
2. Repeat what we have done in Assignment II by replacing ℓ_1 -minimization with 3 matching-pursuit algorithms. Do you have any comment or observation on recovery accuracy as well as computational complexity of linear programming and matching-pursuit algorithms?
3. Repeat the challenge in Assignment I with your 3 brand-new algorithms. Any observation?

Due date: **Thursday, Feb. 22** in lecture