### The code implements the proposed algorithm GENP-AMP in the paper “[Approximate Message Passing-based Compressed Sensing Reconstruction with Generalized Elastic Net Prior](http://arxiv.org/abs/1311.0576)” and reproduces the experimental parts.

### Requirements

### Mathworks MATLAB release 2009b or later

### The CVX software package, (available at <http://cvxr.com/cvx/> )

1. The GAMP software package, (available fromfrom Sourceforge at http://sourceforge.net/projects/gampmatlab/files/), installed and included in MATLAB's path.

All related software packages are included in the document. If the readers want to get the latest version, please download from the webpages above.

Installation instructions:

1. Install the CVX package from <http://web.cvxr.com/cvx/doc/> and include the folders in MATLAB’s path.
2. Install the GAMP software packages from <http://sourceforge.net/projects/gampmatlab/files/> and include the folders in MATLAB’s path
3. The multi-view dataset can be downloaded from <http://www.fujii.nuee.nagoya-u.ac.jp/multiview-data/> .

How to use SI-OWLQN:

Save the data into .mtx format ,e.g.,

[ err1 ] = mmwrite( 'A\_matrix.mtx',A); % %

[ err2 ] = mmwrite( 'y\_matrix.mtx',Y); %

[ err3 ] = mmwrite( 'SI\_matrix.mtx',x\_SI); %

[ err4 ] = mmwrite('x\_matrix.mtx',x);

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The input format should be like this:

SI-OWLQN x\_matrix.mtx A\_matrix.mtx y\_matrix.mtx SI\_matrix.mtx lambda output.mtx –l2weight tau

Then mmread function is applied to read output.mtx into matlab and the MSE can be calculated.