These are the codes for the paper “An Influence-Receptivity Model for Topic based Information Cascades” at ICDM 2017. Full paper is available on arXiv: <https://arxiv.org/abs/1709.01919>.

Please see also a closely related work “Learning Influence-Receptivity Network Structure with Guarantee” at AISTATS 2019. Full paper is available on arXiv: <https://arxiv.org/abs/1806.05730>.

The main codes are the following two:

- Data\_generation.m: generate true coefficient matrix B1\_0, B2\_0 and generate cascades

- optimization.m: alternating proximal gradient descent

Run these two scripts to get the results. Other helper functions:

- drchrnd.m: generate sample from Dirichlet distribution; this is used for topic weight generation  
- grad\_B1.m: calculate gradient with respect to B1

- grad\_B2.m: calculate gradient with respect to B2

- likeli.m: calculate the likelihood function value

- likeli\_community.m: calculate the likelihood function value

- One\_data.m: generate one data/cascade