

Running Environment & Required Packages

- python: 3.6.2
- easydl: 2.0.7
- fancyimpute: 0.5.5
- numpy: 1.19.5
- pandas: 0.20.3
- scikit-tensor-py3: 0.4.1
- scipy: 1.5.4

File Tree

```
|codes/  
|result/ # the folder is for saving the logs and results for visualization.  
|logs/  
|TC-DP/  
|tmp_dataset/ # the folder storing real-world dataset (i.e. Movielens-100K).  
|algo.py # the script contains implementation for several perturbation approaches.  
|utils.py # the script provides the utilization function.  
|run.py # the script is used for basic tensor completions.  
|run_mr.py # the script is used for tensor completions with different missing ratios.  
|run_RW.py # the script is used for tensor completions in real-world datasets.
```

To run the codes

```
# take CP as example, and run the following code in terminal  
python run.py "CP" >> result/logs/cp.log
```

Remark: Default situation is that noisy incomplete tensor \mathcal{X} has a size of $20 \times 20 \times 20$.