

IEMP

Information Exposure Maximization (IEM), which selects two sets of users (called campaigns) from a social network to maximize the expected number of vertices that are either reached by both campaigns or remain oblivious to both campaigns, is an important algorithmic problem in social influence analysis.

Input and Output Format of Algorithm

Options:

- `-n` = string
 - The absolute path of the social network file.
- `-i` = string
 - The absolute path of the two campaigns' initial seed set
- `-b` = string
 - The absolute path of the two campaigns' balanced seed set.
 - Note that this is the input file path of `Evaluator.py` and the output file path of `IEMP_Heur.py` and `IEMP_Evol.py`
- `-k` = integer
 - The positive integer budget
- `-o` = string
 - The absolute path of the output file of the objective value of the balanced seed set

Input Format:

```
python Evaluator.py -n <social network> -i <initial seed set> -b  
<balanced seed set> -k <budget> -o <object value output path>  
python IEMP_Heur.py -n <social network> -i <initial seed set> -b  
<balanced seed set> -k <budget>  
python IEMP_Evol.py -n <social network> -i <initial seed set> -b  
<balanced seed set> -k <budget>
```

Output Format:

- `Evaluator.py`
 - Output the objective value of the balanced seed set into the file specified by `-o <object value output path>`
- `IEMP_Heur.py`
 - Output the two campaigns' balanced seed set into the file specified by `-b <balanced seed set>`
- `IEMP_Evol.py`
 - Output the two campaigns' balanced seed set into the file specified by `-b <balanced seed set>`

Examples:

```
python Evaluator.py -n ../Evaluator/map1/dataset1 -i  
../Evaluator/map1/seed -b ../Evaluator/map1/seed_balanced -k 15 -o  
../Evaluator/map1/object_value
```

```
python IEMP_Heur.py -n ../Heuristic/map1/dataset1 -i  
../Heuristic/map1/seed -b ../dataset/dataset1/seed_balanced -k 15
```