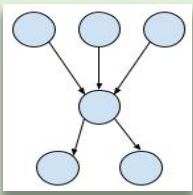


Q : causal query
with respect to G

G : Weighted
ADMG



K : # of synthetic
data sets

N : # of replicates
in a future
experiment

Input:

G : optional full weighted ADMG
 H : optional experimental data
 K : # of synthetic data sets
 N : # of replicates in a future
experiment

Input:

G : full weighted ADMG
 Q : causal query

Input:

A : Valid adjustment sets
 S : synthetic data sets
 Q : causal query
 M : estimation method

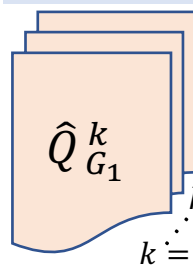
S : synthetic
data sets

logTPM <cell>	control_wt_glc_1 <cell>	control_wt_glc_2 <cell>	fur_wt_dpd_1 <cell>
b0002	11.006653	11.130196	11.704951
b0003	10.415954	10.523138	11.423835
b0004	10.594871	10.725962	10.457270
b0005	6.316102	6.218499	5.422120
b0006	6.915771	6.897597	6.775645
b0007	3.520877	3.507294	3.641289

Valid
adjustment
set A_1

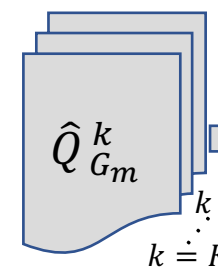
Causal
query
estimation

Valid
adjustment
set A_m



$Var(\hat{Q}_{G_1})$
Cost : C_{A_1}

Variance-
ranked
adjustment
sets



$Var(\hat{Q}_{G_m})$
Cost : C_{A_m}

Step 1

Step 2

Step 3

Input
Section 3.1

Simulating future datasets
Section 3.2

Exploring valid adjustment sets
Section 3.3

Estimating causal query
Section 3.4

Output
Section 3.1