

Σ	The set of all possible event types
E_j	Event of type j
λ_j	The number of arrived events E_j in a unit time (event arrival rate)
m_j	The memory cost of keeping each event of type E_j
\mathcal{Q}	The set of query patterns
Q_i	Query pattern i
$ Q_i $	The number of event types in Q_i
w_i	The utility weight associated with Q_i
n_i	The number of matches of Q_i in a unit time
c_i	The CPU cost of producing each result for Q_i
C	The total CPU budget
M	The total memory budget
x_j	The binary selection decision of event E_j
\bar{x}_j	The fractional sampling decision of event E_j
y_i	The selection decision of query Q_i
\bar{y}_i	The fractional sampling decision of query Q_i
p	The max number of queries that one event type participates in
f	The fraction of memory budget that the largest query consumes
d	The maximum number of event types in any one query