

Notation	Description
$u_i, b_j$	Data owner $i$ , Data buyer $j$
$x_i$	Data element of $u_i$
$\hat{\varepsilon}_i$	Maximum tolerable privacy loss of $u_i$
$w_i$	Payment scheme of $u_i$
$\varepsilon_i$	Actual privacy loss of $u_i$ in query computation
$w_i(\varepsilon_i)$	Compensation to $u_i$ for losing $\varepsilon_i$
$x$	Dataset consisting of a data element of all $u_i$
$Q$	Linear aggregated query requested by the buyer
$W_{max}$	Maximum budget of the buyer
$W_p, W_r$	Query price, Remaining budget of the buyer
$Q(x)$	True query answer
$P(Q(x))$	Perturbed query answer (with noise)
$RMSE$	Root mean squared error
$\chi$	Market maker's profit
$W_{ab}$	Available budget for query computation
$RS$	A representative sample of dataset $x$
$h$	Number of representative samples $RS$
$\Phi$	Number of perturbation run times