UPS is distinguished from conventional PWS in that it

1. Provides runtime profiling, which in effect optimizes the personalization utility while respecting users' privacy requirements;
2. Allows for customization of privacy needs; and
3. Does not require iterative user interaction.

Author proposes a privacy-preserving personalized web search framework UPS, which can generalize profiles for each query according to user-specified privacy requirements. Relying on the definition of two conflicting metrics, namely personalization utility and privacy risk, for hierarchical user profile, we formulate the problem of privacy-preserving. Also use RSA algorithm for encryption and decryption the data, here client sends encrypted queries for the server and that of server sends decrypted results for the client and clients forms outline profile building as g0, and also outline profile generalization.

4. Algorithm

1) Proposed Algorithm
Let,
The system Sis represented as: S=G, S, R, Rr (1)
•Generation of User Profile: G=Generating user profile
Here, user issues query q, proxy generates user profile P, output of user profile Gi. Q=issues Query on client
Gi=Output of profile
•Query and User Profile Sent to PWS:
PWS=Personalized Web Search=PWS1 request=r1, r2. . . rn.
•Personalized Search Result with profile and sent to proxy:
R=result set
Pr=Proxy=pr1
•Present Search result or re-rank: Rr=Re-ranking
D=display search result

2) RSA Algorithm
For Efficient encryption and decryption operations:

In RSA states that "computing M^e (mod n) requires at most $2 \cdot log_e$(e) multiplication and $2 \cdot log_e$(e) divisions" if we use their procedure below. It is important for us to know the amount of steps it would take a computer to encrypt the message so we can see if a method is fast and efficient, or not. We now "exponentiations by repeated squaring and multiplication":

Step1. Let $e_k e_{k-1} \ldots \ldots e_1 e_0$. . . be the binary representation of e.
Step2. Set the variable C to 1.
Step3. Repeat steps 3a and 3b for i = k, k – 1, …. , 0:
Step3a. Set C to the remainder of C^2 when divided by n.
Step3b. If e_i = 1 then set C to the remainder of C · M when divided by n.
Step4. Halt. Now C is the encrypted form of M.

There are more efficient procedures out there, but this one is good too. Also, since decryption follows the same identical procedure as encryption, we can implement the whole operation on a few integrated chips. According to the authors of RSA, "the encryption time per block increases no faster than the cube of the number of digits in n.

5. Results

Table 1: Time per User Profile

Query Type	*Existing System*	*Propose system*
Distinct Query	689	600
Medium Query	756	702
Ambiguous Query	1232	1123

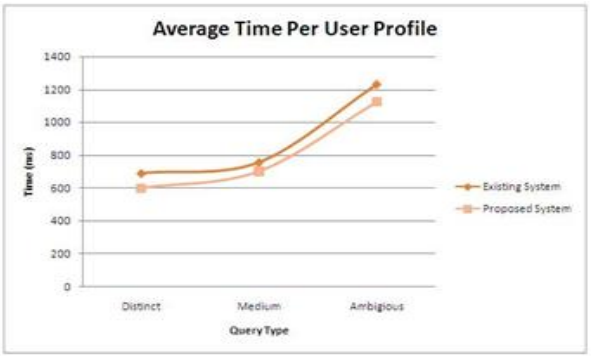

Figure 2: Average Time per User Profile

In our graph, our system take less response time in user profile compare to existing system time.

Table 2: Average Accuracy of a Query Result

Query Type	*Existing System*	*Propose system*
Distinct Query	93%	96%
Medium Query	85%	90%
Ambiguous Query	76%	82%

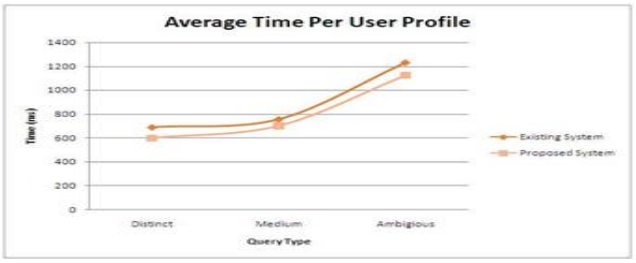

Figure 3: Average Accuracy of Query Result

6. Conclusion

The framework displayed a client side protection insurance structure called UPS for personalized web search. UPS could conceivably be embraced by any PWS that catches client profiles in a progressive scientific categorization. The system permitted clients to detail modified security necessities by means of various leveled profiles and UPS likewise performed online generalization on client profiles to ensure that individual protection without compromising the search quality. Author proposed two ravenous algorithms, in particular Greedy DP and Greedy IL, for the online generalization. Also propose metric prediction using ranking search techniques which include p-click and g-click, here RSA algorithm is used for the encryption and decryption and also we used query classification and profile classification. A metric prediction algorithm is for predict the performance of UPS framework. This metric predicts the search quality of the query on a generalized profile. We

transform the utility prediction problem to the analysis of distinguishing power of a given query on a generalized profile. Similar assumption has been made in to model utility, but this metric cannot be used in our problem settings, as have a profile with hierarchical structure instead of flat one.

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