APPENDIX B

Interval Reduction Score

The interval reduction score for a search user and a given search day, represents the proportion of successively shortening inter-search intervals that occur within the searches for the given user and search day. Given time stamps for the ith and (i+1)th search session for search user *j* on search day *d* let,

$$p_i = t_i - t_{i-1}$$

The average number of successively shortening intervals on a day with $n_{j,d}$ healthcare searches is given by

$$\frac{1}{(n_{j,d}-1)} \sum_{i}^{n_{j,d}-1} k\, I\cdot(p_i > p_{i+1})$$

where k is a weight factor = 1 + w

The above is the same as

$$\frac{1}{(n_{j,d}-1)} \sum_{i}^{n_{j,d}-1} k\, I\cdot(2t_i - t_{i+1} - t_{i-1} > 0)$$