

Select

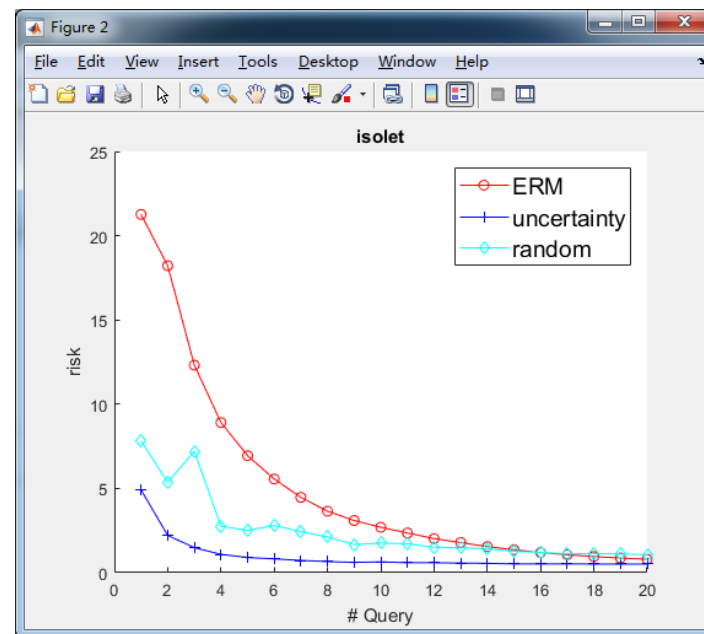
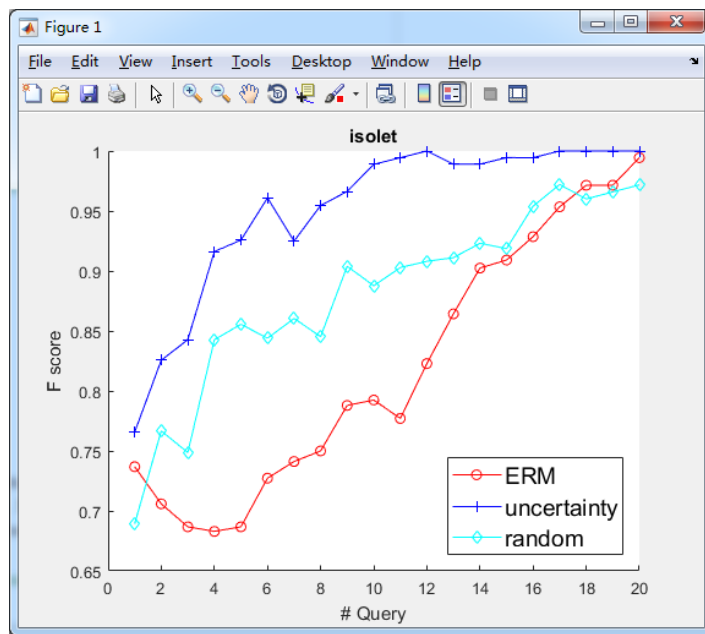
$$\begin{aligned} & \min_{Q, f} \pi R(P \cup Q_P, +) + R(U, -) - \pi R(P \cup Q_P, -) \\ &= \min_{Q, f} \pi [R(P \cup Q_P, +) - R(P \cup Q_P, -)] + R(U, -) \end{aligned}$$

$$S = U \setminus Q$$

$$\begin{aligned} &= \min_{Q, f} \pi \left[\frac{1}{|P \cup Q_P|} \sum_{x_i \in P \cup Q_P} l(f(x_i), +1) \right] + \frac{1}{|U|} \sum_{x_j \in U} l(f(x_j), -1) - \pi \left[\frac{1}{|P \cup Q_P|} \sum_{x_i \in P \cup Q_P} l(f(x_i), -1) \right] \\ &= \min_{\beta^T 1_S = b, f} \frac{\pi}{n_P + b} \left[\sum_{x_i \in P} l(f(x_i), +1) - l(f(x_i), -1) + \sum_{x_i \in S} \beta_i \alpha_i [l(f(x_i), +1) - l(f(x_i), -1)] \right] + \frac{1}{n_U} \sum_{x_j \in U} l(f(x_j), -1) \end{aligned}$$

Problem

iter	# pos	iter	# pos
1	10	11	10
2	10	12	9
3	10	13	10
4	9	14	10
5	8	15	10
6	9	16	10
7	10	17	10
8	10	18	10
9	10	19	10
10	10	20	10



Reason

$$\begin{aligned} Q^* &= \min_{Q \in U} \sum_Q p(x_i) [l(f(x_i), +1) - l(f(x_i), -1)] \\ &= \min_{Q \in U} \sum_Q p(x_i) [-f(x_i)] \end{aligned}$$

 $u(x_i)$

