

A Support Vector Machine for Optimizing Average Precision

Yisong Yue, et al., SIGIR'07

- Finding the most violated constraints
 - MAP is invariant to permutation of (ir)relevant documents
 - Maximize MAP over a series of swaps between relevant and irrelevant documents

- $\operatorname{argmax}_{\mathbf{y} \in \mathcal{Y}} \Delta(\mathbf{y}_i, \mathbf{y}) + \mathbf{w}^T \Psi(\mathbf{x}_i, \mathbf{y})$

Right-hand side of constraints

Start from the reverse order of ideal ranking

Greedy solution

