

# RankingSVM

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- Minimizing the number of mis-ordered pairs

minimize:  $V(\vec{w}, \vec{\xi}) = \frac{1}{2} \vec{w} \cdot \vec{w} + C \sum \xi_{i,j,k}$

subject to:

$$\forall (d_i, d_j) \in r_1^* : \vec{w} \Phi(q_1, d_i) \geq \vec{w} \Phi(q_1, d_j) + 1 - \xi_{i,j,1}$$

...

$$\forall (d_i, d_j) \in r_n^* : \vec{w} \Phi(q_n, d_i) \geq \vec{w} \Phi(q_n, d_j) + 1 - \xi_{i,j,n}$$

$$\forall i \forall j \forall k : \xi_{i,j,k} \geq 0$$

