Robust and Effective Factorization Machines

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Optimization Algorithm

The original objective takes the form:

$$\min_{\mathbf{w}\in\mathbf{R}^d, \mathbf{Z}\in\mathbf{S}_+^{d\times d}} \sum_{i=1}^{n} e_i(max(y_i(\mathbf{w}^\top \mathbf{x}_i + < \mathbf{Z}, \mathbf{x}_i\mathbf{x}_i^\top >))) \tag{1}$$

$$\mathbf{X}\mathbf{X}^\top + \mathbf{P}_M\Sigma_k\mathbf{P}_M^\top \tag{2}$$

Experimental Results