

$\lambda \in \Lambda$
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$$\begin{array}{ll} \min_{C \in U_{ad}, \tilde{w} \in \tilde{k}} \mathcal{L}_{upp}(C, \tilde{w}) & upperlevel \\ s.t. & \mathcal{G}_{upp}(C, \tilde{w}) \leq 0 \\ & \tilde{w} \in \tilde{w} \in W \\ s.t. & \mathcal{G}_{low}(C, \tilde{w}) \leq 0 \end{array} \quad lowerlevel$$

(1)

$$\begin{array}{l} \mathcal{L}_{n \times k}^{upp} \\ \mathcal{L}_{n \times k}^{low} \\ \mathcal{G}_{n \times k}^{upp} \\ \mathcal{G}_{n \times k}^{low} \\ l \\ s \\ up- \\ per \\ outer \\ level \\ lower \\ in- \\ ner \\ level \\ so- \\ ly- \\ tion \\ map \\ S(C) = \\ \{w \in k | \\ \tilde{w} \\ C\} \\ ? \\ ? \\ ? \\ ? \\ ? \\ y \\ x^i \in n_f \\ fea- \\ ture \\ space \\ y_i \in \\ \{-1, 1\} \\ out- \\ put \\ do- \\ main \\ x^i \\ \tilde{C} \\ f \cdot n \\ \times_k \rightarrow \\ gra- \\ di- \\ ent \\ (\bar{C}, \tilde{w}) \\ \nabla f(\bar{C}, \tilde{w}) \in n+k \\ \tilde{w} \\ \nabla_{\tilde{w}} f(\bar{C}, \tilde{w}) \in k \\ F \cdot n \\ \times_k \rightarrow^m \\ Ia- \\ co- \\ dian \\ trix \\ \mathcal{J}F(\bar{C}, \tilde{w}) \in m \times (n+k) \\ \tilde{w} \\ \mathcal{J}_{\tilde{w}} F(\bar{C}, \tilde{w}) \in m \times k \\ M \in n \times k \\ I \subseteq \\ \{1, ..., n\} \\ M_I \\ M \\ I \\ ? \\ ? \\ ? \\ ? \\ \tilde{X} \subset n_f \\ in- \\ put \\ space \end{array}$$