Deep Super-Class Learning for Long-Tail Distributed Image Classification

Yucan Zhou, Qinghua Hu, Yu Wang

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Highlights

- We propose a deep super-class learning model for long-tail distribution classification. A block-structured sparse regularization term is designed and attached to the objective function. Thus, the deep model can obtain the super-class structure while learning the features and the classifier in an end-to-end procedure.
- The weight matrix of the classification layer learnt by the proposed model indicates the different importance evaluations on the learnt representation, which implies the cluster structure of the original classes.
- We present the performance evaluation of the proposed model on two real-world image datasets. The experimental results demonstrate that the super-class construction strategy can achieve better results for long-tail distribution classification, and the proposed model can further improve the performance of other relevant methods.