Background

Figure: Example of image with noisy multi-labels. (C. O. Pene *et al.*)

Clean Data $(\boldsymbol{X}, \boldsymbol{Y})$, where $\boldsymbol{Y} = \left\{ Y^1, Y^2, \ldots, Y^q \right\} \in \{0,1\}^q$

Transition Matrix $T_{ik}^j(\boldsymbol{x}) = P\left(\bar{Y}^j = k \mid Y^j = i, \boldsymbol{X} = \boldsymbol{x} \right), j = 1, 2, ..., q$

Noisy Data $(\boldsymbol{X}, \bar{\boldsymbol{Y}})$, where $\bar{\boldsymbol{Y}} = \left\{ \bar{Y}^1, \bar{Y}^2, \ldots, \bar{Y}^q \right\} \in \{0,1\}^q$

- To address the problem of identifying the transition matrices in **noisy multi-label learning**, we prove some **identifiability results** of the class-dependent transition matrix in such setting.
- Inspired by the identifiability results, we propose **a new estimator by exploiting label correlations** without neither anchor points nor accurate fitting of noisy class posterior.
- Empirical results on VOC2007, VOC2012, and MS-COCO datasets demonstrate the effectiveness of our estimator to estimate the transition matrix.

Code: `https://github.com/ShikunLi/Estimating_T_For_Noisy_Mutli-Labels`

Welcome to read our paper !