

Multi-label Learning With Emerging New Labels

In a multi-label learning task, an object possesses multiple concepts where each concept is represented by a class label. Previous studies on multi-label learning have focused on a fixed set of class labels, i.e., the class label set of test data is the same as that in the training set. In many applications, however, the environment is dynamic and new concepts may emerge in a data stream. In order to maintain a good predictive performance in this environment, a multi-label learning method must have the ability to detect and classify instances with emerging new labels. To this end, we propose a new approach called Multi-label learning with Emerging New Labels (MuENL). It has three functions: classify instances on currently known labels, detect the emergence of a new label, and construct a new classifier for each new label that works collaboratively with the classifier for known labels.

Domain: Python / Machine Learning

Technology: Python