

# Mixture Proportion Estimation in Weakly Supervised Learning

Masashi Sugiyama

*RIKEN and the University of Tokyo, Japan*

## Abstract

Estimation of mixing coefficients in a mixture distribution has a variety of applications in machine learning. For example, under class prior shift, estimation of class priors from labeled training data and unlabeled test data plays an essential role in adaptation; for enabling positive-unlabeled classification, class prior estimation only from positive and unlabeled data is a key challenge; and to cancel the bias caused by label noise, estimation of the noise transition is a central task. In this talk, I will give an overview of our advances in mixture proportion estimation and their use in various machine learning tasks.


---

*LQ 2021: 1st International Workshop on Learning to Quantify, Gold Coast, AU, November 1 and November 5, 2021.*

✉ [sugi@k.u-tokyo.ac.jp](mailto:sugi@k.u-tokyo.ac.jp) (M. Sugiyama)



© 2021 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

 CEUR Workshop Proceedings (CEUR-WS.org)