

Nonparametric Regression with Homogeneous Group Testing Data

Peter Hall

University of Melbourne, Australia

In this talk we introduce new nonparametric predictors for homogeneous pooled data in the context of group testing for rare abnormalities, and show that they achieve optimal rates of convergence. In particular, when the level of pooling is moderate then, despite the cost savings, the method enjoys the same convergence rate as in the case of no pooling. In the setting of “over-pooling” the convergence rate differs from that of an optimal estimator by no more than a logarithmic factor. Our approach improves on the random-pooling nonparametric predictor, which is currently the only nonparametric method available, unless there is no pooling, in which case the two approaches are identical.