Dr. Hassan Doosti
Lecturer in Statistics, Department of Statistics, Macquarie University

Title:
Nonparametric tilted density function estimation

Abstract:

In this talk, we first review the history of nonparametric curve estimation by tilting. Then we will have some discussion about our recent publication, i.e. Doosti and Hall (2016). We also will introduce a new tilted estimator for nonparametric estimation of a density function. We use a cross-validation criterion to choose both the bandwidth and the tilted estimator parameters. We demonstrate theoretically that our proposed estimator provides a convergence rate which is strictly faster than the usual rate attained using a conventional kernel estimator with a positive kernel. Finally we propose new applications/open problems of tilting in some applied fields.

References:

1- Doosti, H. and Hall, P. (2016) Making a non-parametric density estimator more attractive, and more accurate, by data perturbation. J. R. Statist. Soc. B, 78(2), 445-462.

2- Doosti, H., Hall, P. and Mateu. J. (2017). Nonparametric Tilted Density Function Estimation: A Cross-validation Criterion. Submitted.