(Conformal) Isotonic Distributional Regression

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Abstract

Isotonic distributional regression (IDR) is a nonparametric distributional regression approach under a monotonicity constraint. It has found application as a generic method for uncertainty quantification, in statistical postprocessing of weather forecasts, and in distributional single index models. IDR has favorable in-sample calibration and optimality properties, which allow to conformalize it and obtain out-of-sample online guarantees.