DSSV 2023 Data Science, Statistics & Visualisation
EC DA 2023 European Conference on Data Analysis

A Gentle Introduction to Conformal Regressors and Predictive Systems

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Conformal regressors transform point predictions of any underlying regression model into prediction intervals with a guaranteed error rate, as set by the user. Conformal predictive systems is a recent generalization by which the point predictions are transformed into cumulative distribution functions. From these, prediction intervals can be obtained, as well as percentiles, calibrated point predictions, and p-values for given target values. A gentle introduction to the two frameworks is given, covering standard, normalized and Mondrian conformal regressors and predictive systems, see e.g., [1]. The techniques will be illustrated using the Python package crepes [2].

[1] H. Boström, U. Johansson, and T. Löfström, "Mondrian conformal predictive distributions," in *Proceedings of the Tenth Symposium on Conformal and Probabilistic Prediction and Applications* (L. Carlsson, Z. Luo, G. Cherubin, and K. An Nguyen, eds.), vol. 152 of *Proceedings of Machine Learning Research*, pp. 24–38, PMLR, 08–10 Sep 2021.

[2] H. Boström, "crepes: a python package for generating conformal regressors and predictive systems," in *Proceedings of the Eleventh Symposium on Conformal and Probabilistic Prediction and Applications* (U. Johansson, H. Boström, K. An Nguyen, Z. Luo, and L. Carlsson, eds.), vol. 179 of *Proceedings of Machine Learning Research*, PMLR, 2022.