Reality Checks for Evaluation Practices in Time Series Forecasting

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Abstract. On 15th September 2025, Vítor Cerqueira delivered a keynote talk at the 13th Workshop on New Frontiers in Mining Complex Patterns in conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD) in Porto, Portugal. The following is the abstract of his talk and a short biography.

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1 Abstract

Despite several advances in time series forecasting algorithms, current evaluation practices show several limitations. Evaluation approaches often fail to provide reliable estimates of performance, undermining empirical studies and proposed methodologies. This talk explores four critical gaps between current evaluation methods and practical forecasting needs, specifically: *i)* myopic evaluations that average forecasting accuracy across all instances; *ii)* the mismatch between forecasting accuracy and practical utility; *iii)* dataset selection bias; and *iv)* ignoring temporal constraints during evaluation.

2 Short Biography

Vitor Cerqueira is a Researcher at the Faculty of Engineering, University of Porto, and member of the Laboratory for Artificial Intelligence and Computer Science (LIACC) and Center for Responsible AI. Since 2015, he has specialized in time series analysis and automated machine learning, publishing in top-tier venues and developing innovative approaches for real-time anomaly detection, meta-learning for forecasting, and concept drift detection.