# Department SEMINARS



## Spatial Classification and Regression Trees for predictions of geo-localized data

## **GIANFRANCO PIRAS**

University of Chieti-Pescara

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Seminar Room Bruguier Pacini, DEM + <u>Online via Teams</u>

### ABSTRACT

Classification and Regression Trees (CART) is a widely used statistical technique for predictive modeling, employing binary recursive partitioning to segment data. However, when applied to spatial data, challenges arise due to cross-sectional dependence. This paper contributes to the existing literature by proposing an alternative CART algorithm specifically tailored for spatial data. This approach integrates spatial information into the algorithm to enhance predictive performance.

To evaluate the proposed spatial CART algorithm, we design a Monte Carlo experiment that compares its predictions with those obtained using the standard CART method. The results demonstrate the potential benefits of incorporating spatial dependencies into the predictive modeling process. Finally, we present an empirical application on the well-known Boston. The results from this application show that the spatial versions substantially enhance the prediction accuracy.

For information: pietro.battiston@unipi.it