

## ABSTRACT

JORGE, Patricia M. C. **Synthesis of fuzzy pattern trees ensemble through cartesian genetic programming in non-stationary environments**. 2018. 87f. Dissertação (Mestrado em Engenharia Eletrônica) – Faculdade de Engenharia, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2018.

Extraction of data in non-stationary environments requires techniques different from traditional approaches used in supervised learning. Applications such as temperature measurement by sensors, spam detection, climate forecast and customer buying preference are some examples of situations in which information on the data distribution may vary over time. In environments where this scenario occurs is called “concept drift” and it is a challenge for the classifier to learn from the data. In this work is presented a method based on an ensemble of Fuzzy Patterns Trees induced by Cartesian Genetic Program. This model must be able to self-adapt and maintain accurate performance as well as providing knowledge to help in analysis and interpretability of the data. For the execution of experiments, artificial and real database with different drifts, high dimensionality and different balance between classes were used. The results show that the method is robust and competitive with others in the literature.

Keywords: Concept Drift; Fuzzy Pattern Trees; Cartesian Genetic Programming; Non-Stationary; Interpretability; Classification.