



**Título:** Interpretative Variable Selection via Perfect Bipartite Matching

**Data:** 29/08/2023

**Horário:** 16h00

**Local:** Sala de Seminários - Bloco 952

**Resumo:**

Feature selection is a fundamental process in machine learning to identify the most relevant subset of features for a given problem. Among the various feature selection approaches, filter

methods stand out for their simplicity and efficiency. However, these methods lack interpretability regarding the relationships between the selected and unselected features. To address this challenge, we propose a novel pairwise feature selection method based on Perfect Bipartite Matching, which establishes optimized linear relationships between features, thus facilitating the interpretation of feature connections. Empirical evaluations using 18 UCI datasets demonstrate the effectiveness of our approach compared to baseline methods. Furthermore, we present a case study on Chagas disease, showcasing detailed interpretation results and the significance of selected features in sudden cardiac death prevention. The emphasis on interpretability contributes to developing more effective and transparent Computer-Aided Diagnosis (CAD) tools, facilitating early detection and prevention efforts in medical diagnostic applications.

**Banca examinadora:**

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