WORCAP2021
Workshop em Computação Aplicada

DEEP GPA: GRADIENT PATTERN ANALYSIS AS FEATURE EXTRACTOR IN DEEP NEURAL NETWORKS FOR SUPERNOVAE SPECTRAL DATA

Luís Ricardo Arantes Filho

Instituto Nacional de Pesquisas Espaciais – INPE

luisricardoengcomp@gmail.com

Resumo. The adoption of Machine Learning and Deep Learning techniques to build classification and regression models is an important trend in the current scientific scenario. In this sense, focusing only on the final performance of these models as a good classification or approximation of functions does not allow us to observe how features are extracted, processed, and separated. In this sense, we approach a feature extraction methodology for Deep Learning and Artificial Neural Networks models. We present Deep GPA which is a combination of Gradient Pattern Analysis and fully connected neural networks. To test and validate this approach, we address Deep GPA as an alternative to features extracted by CNN convolutional neural network models for the classification of supernova spectral data.