

Searching the best performance in machine learning techniques classifying uncertain blazars among the Fermi-LAT gamma-ray sources

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Machine learning is an automatic learning technique that is revolutionizing the scientific research with innovative applications. The Artificial Neural Networks (ANN) is a powerful and

fast machine learning method often used in astrophysics. Active Galactic Nuclei (AGNs) of uncertain nature have been classified by ANN algorithms based on data collected at gamma-ray

energies when rigorous multiwavelength analysis is not available. In ten years of operation of the Fermi-LAT gamma telescope, the number of uncertain sources has exceeded 50% of the detected sources.

An efficient ANN algorithm can significantly improve the number of classified AGNs in a short time.

We use a TensorFlow Network and we compare our original algorithm against the existing ANNs algorithm used for previous AGN studies in order to improve and optimize the performances of an ANN method.