Stellar Classification

In astronomy, stellar classification is the classification of stars based on their spectral characteristics. The classification scheme of galaxies, quasars, and stars is one of the most fundamental in astronomy. The early cataloguing of stars and their distribution in the sky has led to the understanding that they make up our own galaxy and, following the distinction that Andromeda was a separate galaxy to our own, numerous galaxies began to be surveyed as more powerful telescopes were built. This dataset aims to classify stars, galaxies, and quasars based on their spectral characteristics.

Your task is to classify stellars, using this <u>dataset</u>.

The report must have:

- 1. A problem statement.
- 2. Data processing (data pre-processing, data splitting) used, etc.
- 3. Models used. You should use one shallow and a deep-learning model.
- 4. Training algorithm(s) employed, including hyperparameters selection.
- 5. Results obtained and discussed.
- 6. Conclusions
- 7. References