

Theoretical questions

1. Define the problem of “vanishing” and “exploding” gradients.
2. Enumerate 2 or 3 examples real-world tabular data challenges that might impact the learning process of a Deep Learning model.

Code challenge

Having the dataset for hourly SO₂ concentrations in Sacramento County as work base, **propose** and **implement** some pre-processing steps using your preferred tools. **Justify** all the proposed pre-processing steps.

- Implement a simple RNN architecture to perform predictions for the daily max hourly SO₂ concentration for the State of California, using Tensorflow (preferably Tensorflow 2.0 version).

Have in mind this is an exercise that shouldn't take more than 8 hours of your time. Keep it simple, we are looking to evaluate rather the rationale behind your choices than the correctness of the results.