DSA 554 3.0 Spatio-temporal Data Analysis

Assignment 2: 10 marks

Assignment description explained: 12 February 2023 (During the in-class lecture)

Assignment due date: 2 April 2023

This assignment is based on `meuse` dataset. The `meuse` dataset contains measurements for concentrations of different elements, over an area in the Netherlands.

Follow the codes in the link below to download the meuse dataset:

https://thiyanga-spatiotemporal.netlify.app/posts/time_series/week11#/load-data

We discussed how to use the Kriging approach to interpolate values for meuse data during the lecture.

The associated tutorial is given here:

https://scikit-gstat.readthedocs.io/en/latest/auto_examples/tutorial_01_getting_started.html#sphx-glr-auto-examples-tutorial-01-getting-started-py

In the assignment, I want you to use a machine learning model to interpolate the values for the meuse data and compare your results against the Kriging approach.

Help:

You may need to think of suitable features before training the machine learning model.

Your final submission should include the following:

- Brief description of the methodology
- Analysis codes, results, and interpretations
- Comparison between kriging and machine learning results
- Conclusions

Please document your analysis in a Jupyter notebook and submit it via LMS.