Exploratory data analysis in environmental health

Dr Stéphane Joost, Dr Mayssam Nehme, Noé Fellay

Setup instructions

***Note**: The following steps will guide you in creating a new, clean environment named "gwr_clean_env", which contains all the necessary packages to ensure that the "GWR.ipynb" notebook works smoothly. If you prefer not to create a new environment and instead use an existing one, ensure that the required packages (listed below) are installed in your environment.*

***Required Packages**:*

numpy, pandas, geopandas, matplotlib, mgwr, jupyter, statsmodels, scipy==1.10.1

Environment Setup

1. **Install Anaconda or miniconda**:
    - Download Anaconda from this link or Miniconda from this link.
    - Follow the detailed installation instructions specific to your operating system.
2. **Create and configure the conda environment:**
    - Open the Anaconda or Miniconda Prompt (on Windows) or Terminal (on macOS/Linux).
    - Option 1 (recommended – faster, uses pip):
        I. conda create -n gwr_clean_env python=3.10 -y
        II. conda activate gwr_clean_env
        III. pip install numpy pandas geopandas matplotlib mgwr jupyter statsmodels "scipy==1.10.1"
        IV. python -m ipykernel install --user --name gwr_clean_env --display-name "GWR Clean Environment"
    - Option 2 (alternative – slower, uses conda only)
        I. conda create -n gwr_clean_env -c conda-forge python=3.10 geopandas pandas numpy matplotlib mgwr jupyter statsmodels "scipy=1.10.1" -y
        II. conda install -n gwr_clean_env ipykernel -y
        III. python -m ipykernel install --user --name gwr_clean_env --display-name "GWR Clean Environment"
3. **Open jupyter notebook:**
    - Navigate to your working directory and launch Jupyter Lab:
      cd C:\XXX… \XXX
      jupyter lab

      Open "GWR.ipynb" and ensure you select the environment with all the required packages installed.
4. **Verify package imports**
    - Run the first cell, labeled "Importing libraries," to check for any import errors. If there are none, you're all set for the assignment.