

Data Analysis

i. Geoprocessing:

- Verify the spatial relationships to avoid overlaps, gaps, or invalid geometries.
- Ensure all spatial datasets have the same coordinate system or project them to a common one for accurate analysis.
- Convert data between different formats (e.g., vector to raster) based on analysis requirements.

ii. Spatial Analysis:

- Utilize buffering and proximity analysis to study the relationships between features and their surroundings.
- Combine spatial datasets and aggregate data to analyze relationships and summarize information.
- Use appropriate spatial interpolation methods to estimate values at unsampled locations.
- Apply network analysis to model movement and connectivity within spatial networks.

iii. Statistical Modelling:

- Split the dataset into training and testing subsets for model training and evaluation.
- Clearly define the dependent variable and select relevant independent variables for the model.
- Choose appropriate statistical models based on the nature of the data. (e.g., linear regression, logistic regression).
- Assess model performance using appropriate metrics (e.g., accuracy, RMSE, R-squared) and cross-validation techniques.
- Interpret the results of the statistical model in the context of the research objectives and data patterns.
- Validate the model on unseen data to ensure its generalizability and avoid overfitting.

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