PROJECT REPORT: MALARIA HOTSPOT PREVALENCE ANALYSIS (NIGERIA)

1. Overview

This report summarizes the malaria hotspot analysis project conducted using geospatial and statistical methods. The project identified high-risk regions in Nigeria and built classification models to predict malaria risk levels.

2. Data Collection

Data was gathered from national malaria surveillance datasets, including prevalence, case counts, population, and associated geospatial information.

3. Data Preprocessing

Preprocessing steps included cleaning, handling missing values, feature engineering, and data splitting for modeling.

4. Exploratory Data Analysis (EDA)

Key analyses included statistical summaries, temporal trend analysis, distribution plots, and correlation studies.

5. Exploratory Spatial Data Analysis (ESDA)

Spatial mapping techniques such as choropleth maps and heatmaps were used to identify geographic malaria hotspots.

6. Machine Learning Modeling

A Naive Bayes classifier was trained to categorize malaria risk as Low, Medium, or High.

7. Evaluation

Model accuracy, precision, recall, and F1-score were used to assess prediction quality.

8. Conclusions

The model successfully identified major malaria hotspots and demonstrated the potential for predictive malaria surveillance.