Predicting Poverty Levels Using World Bank Indicators

1. **Project Idea:**
   The project, titled Predicting Poverty Levels Using World Bank Indicators aims to address the challenge of incomplete or outdated poverty data that hinders effective resource allocation by policymakers. By leveraging socioeconomic and development indicators from the World Bank, the goal is to develop a machine learning model to accurately predict poverty levels.

2. **Relevance to Sustainable Development Goals (SDGs):**

   This project directly contributes to **SDG 1: No Poverty** by providing insights to identify and target regions with high poverty levels. Accurate predictions can help governments and organizations prioritize interventions to reduce poverty and achieve economic growth.

3. **Literature Examples:**

   - H. Zixi, "Poverty Prediction Through Machine Learning," 2021 2nd International Conference on E-Commerce and Internet Technology (ECIT), Hangzhou, China, 2021, pp. 314-324, doi: 10.1109/ECIT52743.2021.00073.
   - Utilities of Artificial Intelligence in Poverty Prediction A Review by Aziza Usmanova

4. **Describe Your Data:**

   The dataset for this project is the World Development Indicators (WDI), provided in CSV format. It includes over 1,600 indicators covering multiple years and countries, offering a rich source of socioeconomic data. Preprocessing involves extracting relevant features such as GDP, literacy rates, employment data, and healthcare access to prepare the data for machine learning. Missing values are addressed using imputation methods, and the data is normalized and standardized to ensure compatibility with machine learning models.

5. **Approach (Machine Learning or Deep Learning):**

   The chosen approach for this project is machine learning, utilizing algorithms such as Decision Trees, Random Forest, and Gradient Boosting. This choice is justified as the dataset is structured and tabular, making machine learning methods well-suited for prediction tasks. These algorithms can effectively handle diverse indicator types while providing interpretable results. Additionally, the task's complexity does not necessitate deep learning, ensuring computational efficiency.

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