AI for Climate Action

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Predicting CO2 Emissions to Support SDG 13

The Problem

Climate change is accelerating due to rising CO_2 emissions

Governments struggle to forecast emissions accurately

Lack of predictive tools leads to ineffective climate policies

Urgent need for data-driven climate solutions

The Solution

Built a machine learning model to predict future CO_2 emissions

Focused on **SDG 13: Climate Action**

Trained on features like:

- GDP
- Population
- Energy use
- Industrial output

Tools & Methods

Language: Python

Libraries: Pandas, Scikit-learn, Matplotlib

Models Used:

- Linear Regression
- Random Forest Regressor

Steps:

- Data Cleaning & Preprocessing
- Model Training & Testing
- Result Evaluation

Results

MAE: ~7868

R^2 Score: ~0.60 (Linear Regression)

Model predicts trends with decent accuracy

Visualization helps highlight future CO_2 patterns

Ethical Considerations

Bias risk due to incomplete or one-sided data

Need for transparent, fair, and inclusive datasets

Promotes responsible AI and sustainable planning

Future Scope

Use real-world data from World Bank, Kaggle, UN databases

Expand to include multiple countries and sectors

Build a web dashboard for public and policymaker use

Integrate with live environmental data feeds