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# Carbon Emissions Predictor

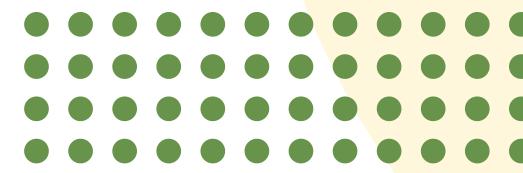
*An AI-Powered Tool for Environmental Insight*

## Group Members:

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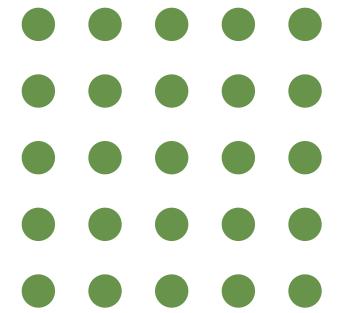
# Our Vision

Empowering Climate Action Through Data



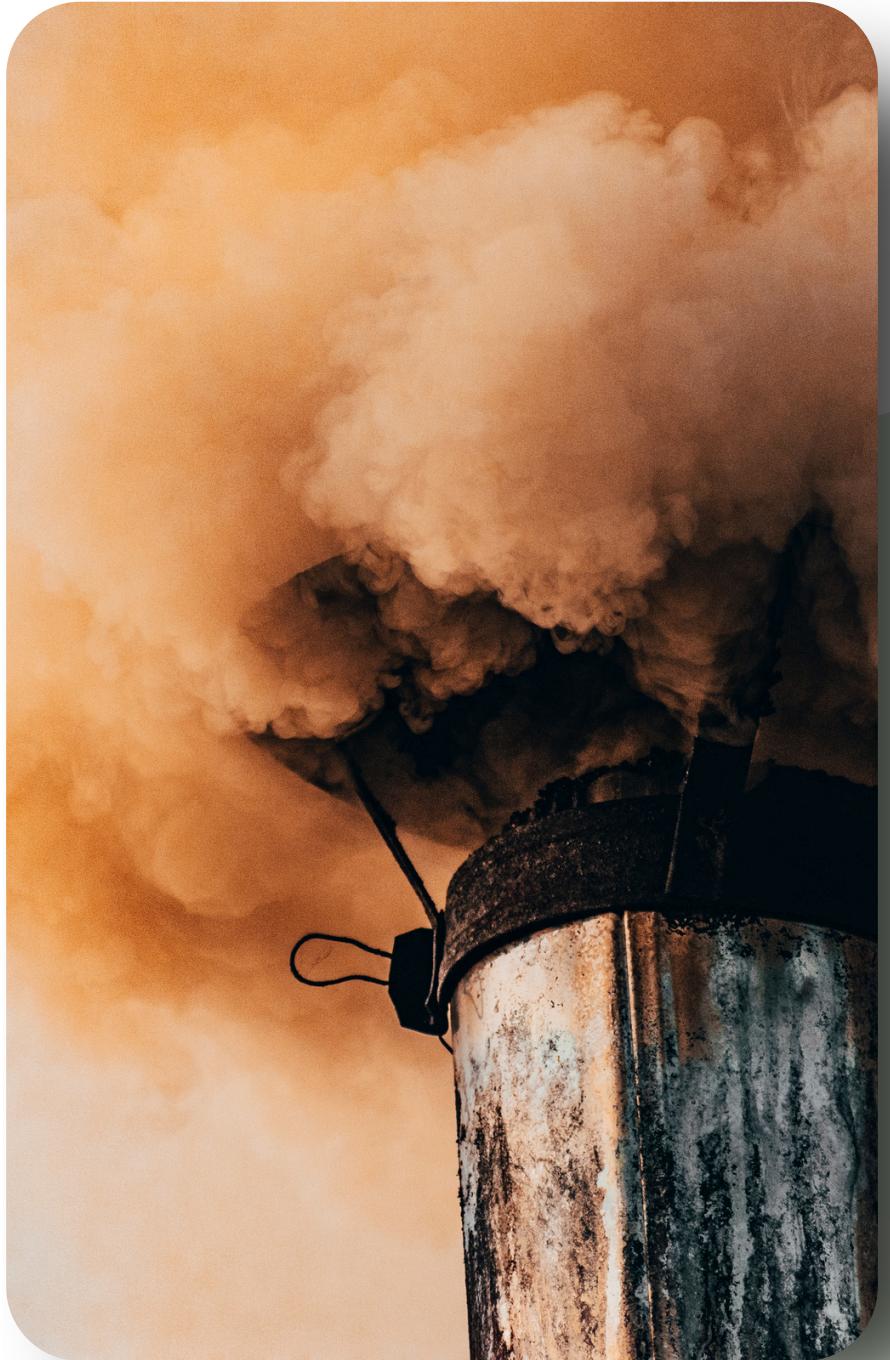
- ▶ Understand the impact of AI in environmental forecasting.
- ▶ Learn how machine learning models predict complex environmental trends.
- ▶ Explore the integration of AI with user-friendly web platforms.
- ▶ Promote data-driven decision-making for climate change mitigation.
- ▶ Highlight the role of "Green AI" in sustainable development.





# The Challenge

Understanding and Predicting Emissions

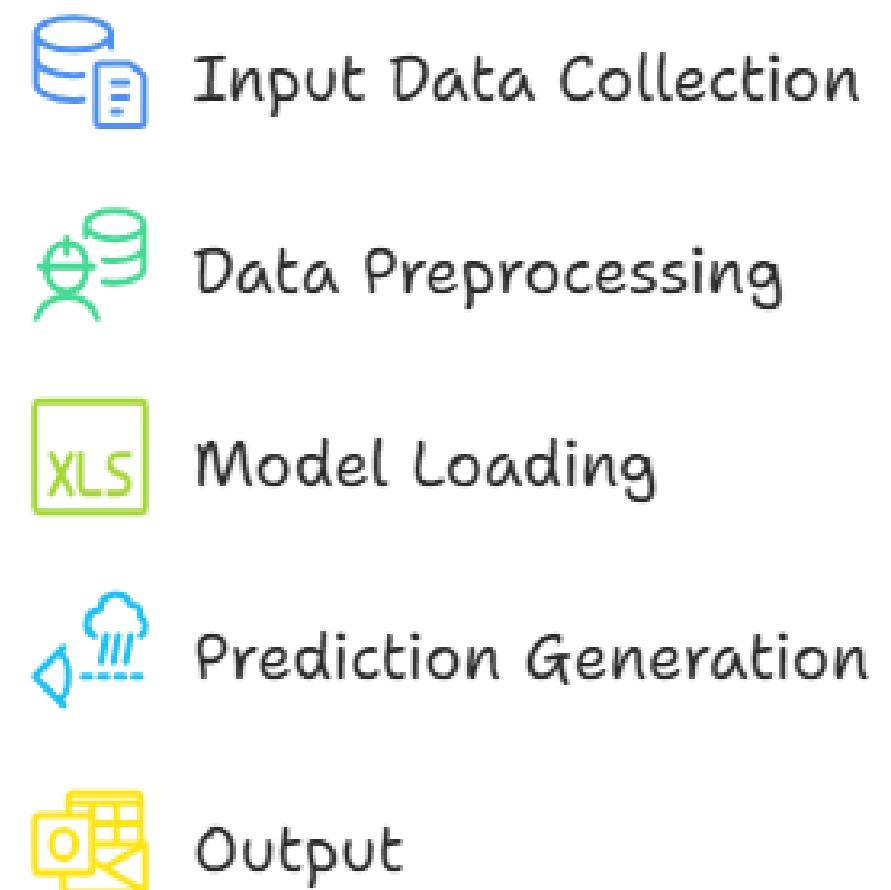
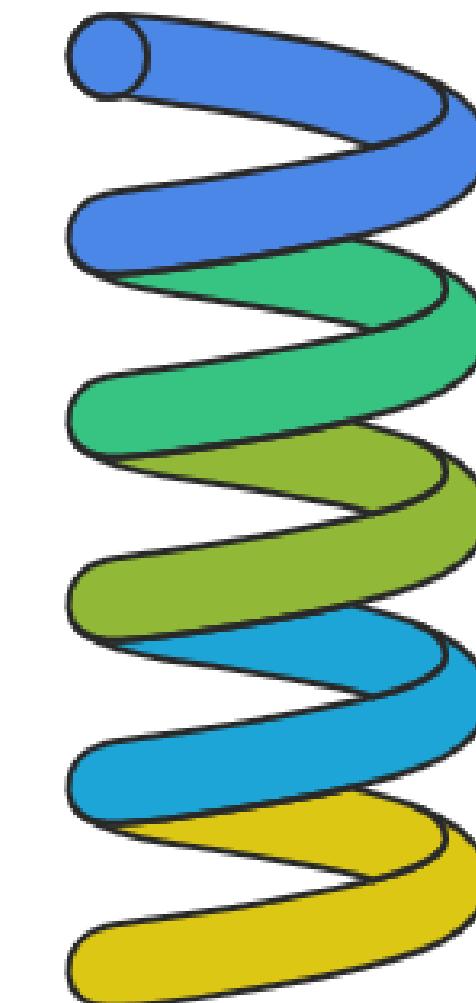


- ▶ Lack of accessible tools for forecasting global and country-specific emissions.
- ▶ Need for a clear, data-driven understanding of emission trends to inform policy and action.
- ▶ Difficulty in visualizing future environmental impacts based on historical data.
- ▶ Bridging the gap between complex climate data and public understanding.

# Carbon Emissions Predictor

Our AI-Powered Solution

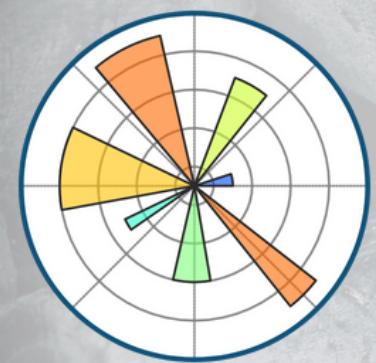
- ▶ Instant forecasting of global CO<sub>2</sub> emissions.
- ▶ Country-specific Greenhouse Gas (GHG) emission predictions.
- ▶ Interactive visualizations for historical data and future trends.
- ▶ User-friendly interface for easy access to critical environmental data.



# Powering Predictions

## Our Tech Stack

- Frontend: Streamlit
- AI/ML: XGBoost (for robust regression), Scikit-learn (for preprocessing and model utilities)
- Data Analysis: Pandas, NumPy
- Visualization: Matplotlib, Plotly (for interactive charts in Streamlit)
- Languages: Python
- Others: Joblib (for model serialization)

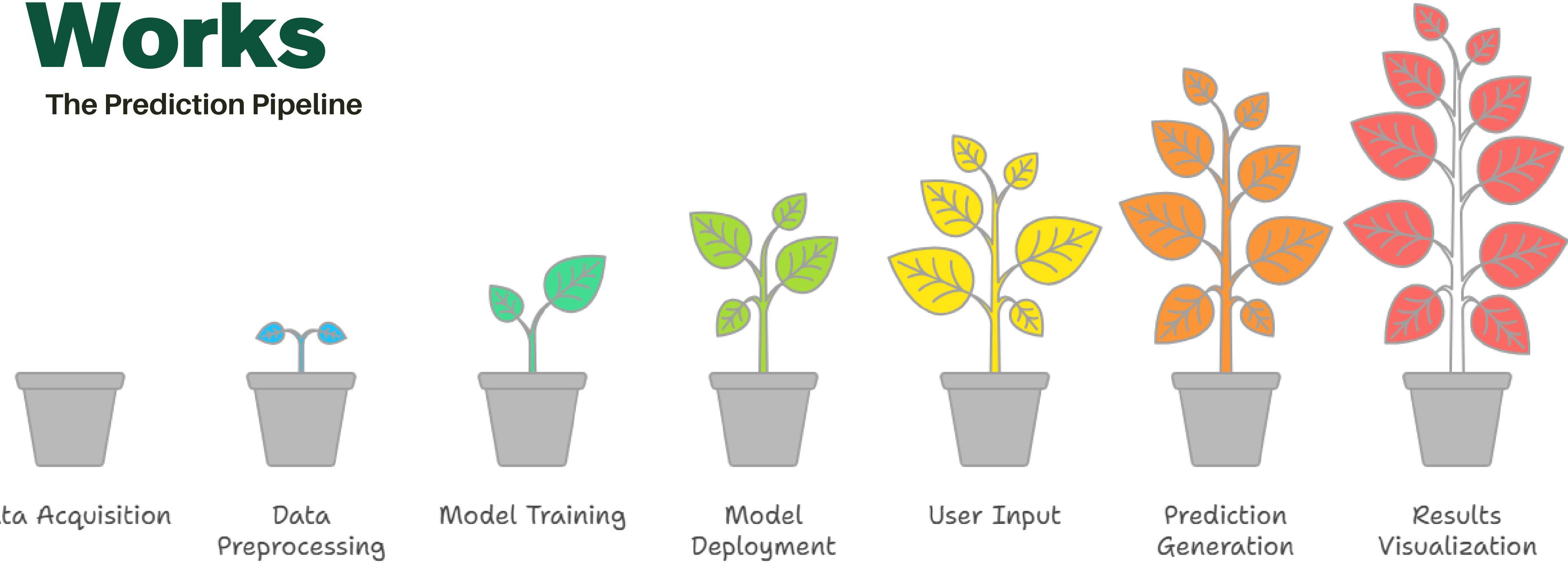


# Streamlit



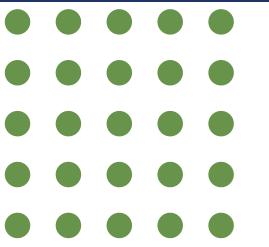
# How It Works

## The Prediction Pipeline



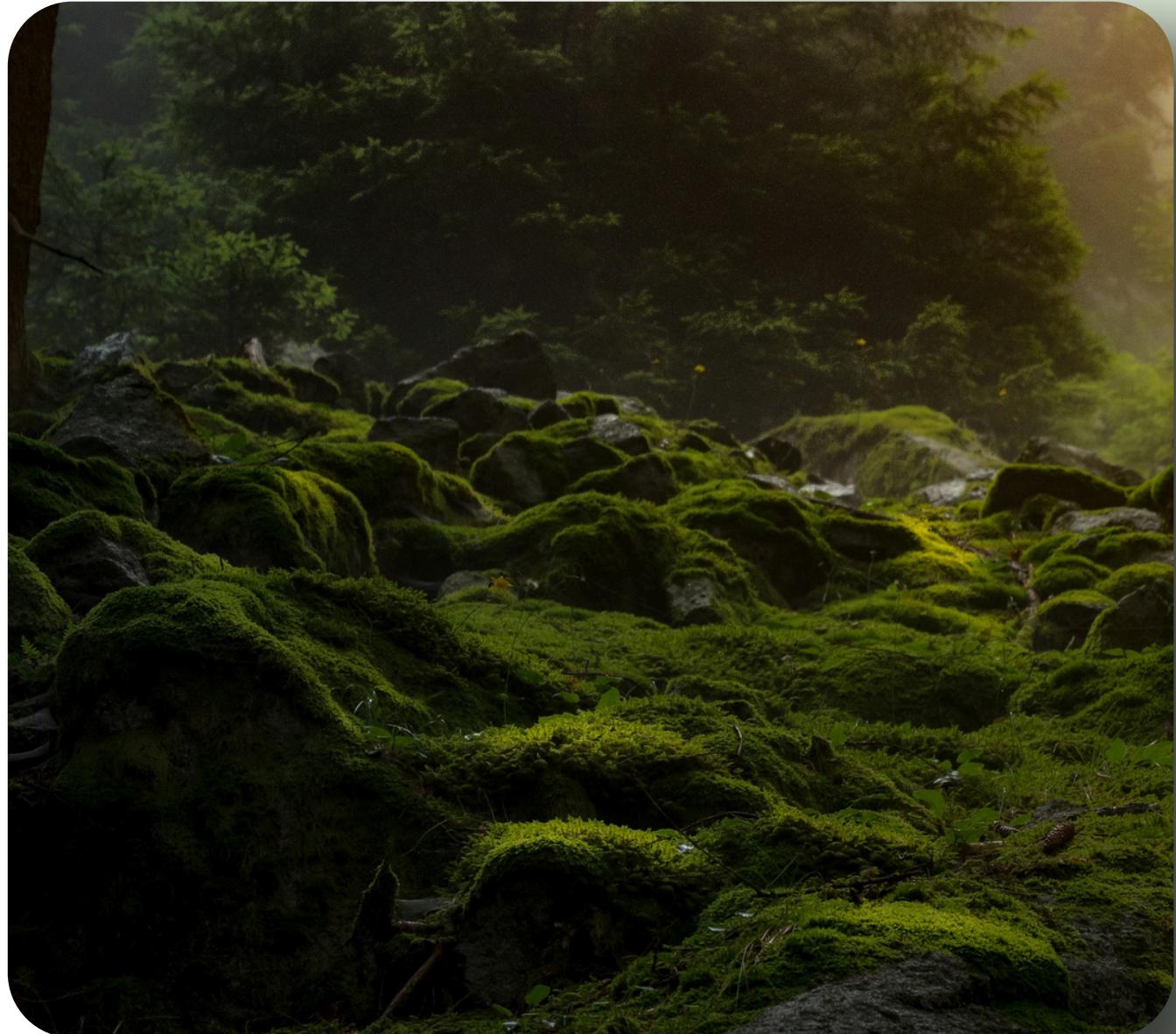
# PROJECT DEMO

## CARBON-EMMISIONS-PREDICTOR



# Conclusion

- The Carbon Emissions Predictor leverages the power of AI to provide accessible and insightful forecasts of global and country-specific emissions.
- By making complex environmental data understandable and actionable, it supports informed decision-making for climate change mitigation.
- This project embodies the principles of "Green AI" by using technology to address pressing environmental challenges and promote a sustainable future.
- It's a step towards empowering individuals and policymakers with the knowledge needed to drive positive environmental change.





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