
The Dual Challenge-

Industrial Growth & Climate Impact

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Outline

- Introduction
 - Objective
 - Data Overview
 - Data Structure
 - Data Pipeline
 - Analysis Approach
 - Key Visualizations
 - Results
 - Interpretation
 - Conclusion
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Analyzing the Impact of US Industrial Sectors on Climate Change and Economic Growth (2010-2020)

- Exploring the relationship between **economic growth** and **greenhouse gas emissions** by industrial sectors in the US.
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Introduction

- Industrial growth drives economic prosperity but contributes to greenhouse gas emissions.
 - This project analyzes the dual impact of US industrial sectors on economic growth and climate change.
 - Insights help policymakers and businesses balance economic benefits and environmental costs.
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Objective

- Investigate the contributions of US industrial sectors to GDP and greenhouse gas emissions.
 - Examine relationships between sectoral GDP contributions and emissions (2010-2020).
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Data Overview

Data Source 1

Greenhouse gas emissions by sector

- The dataset breaks down annual greenhouse gas emissions by major economic sectors globally, covering energy use, industry, agriculture, and other sectors from 2010-2020, helping understand which parts of the economy contribute most to climate change.
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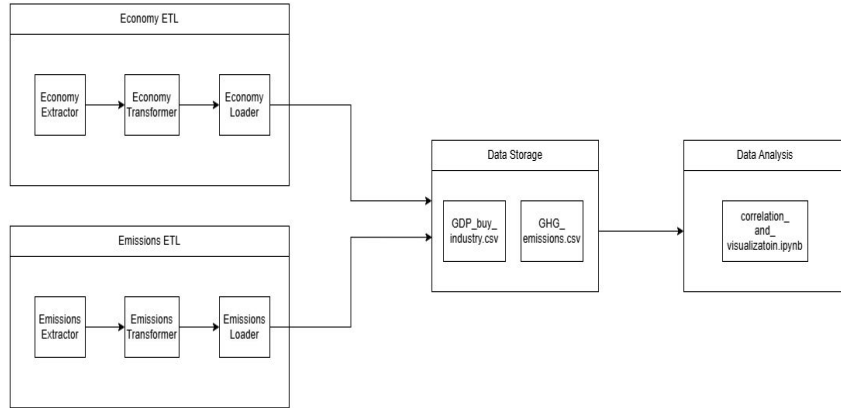
Data Source 2

Interactive Access to Industry Economic Accounts Data

- **Description:** This dataset tracks the economic performance and GDP contributions of different U.S. industries over time, providing detailed metrics on industry value added, output, and growth rates.

Data Pipeline

End-to-End Data Pipeline



- Automated ETL process cleans and structures the datasets.
- Ensures quality and consistency for analysis.
- Outputs ready-to-analyze data.

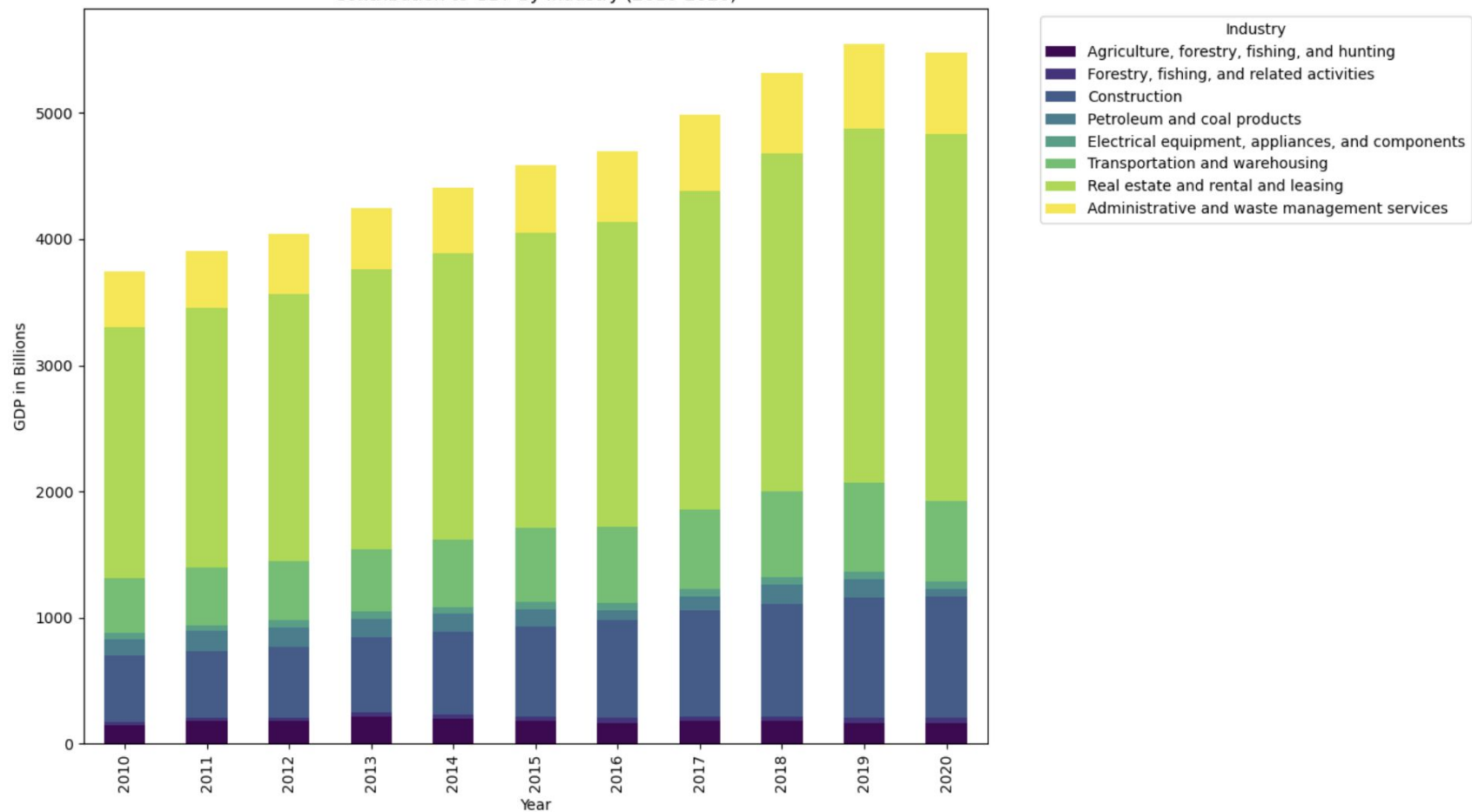
Analysis Approach

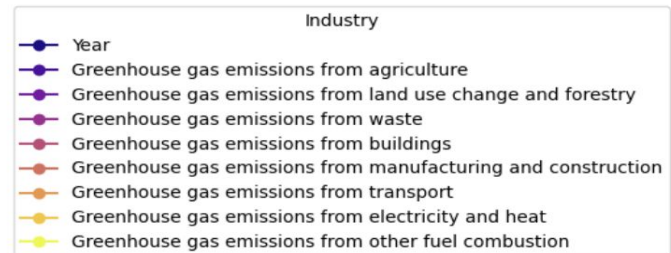
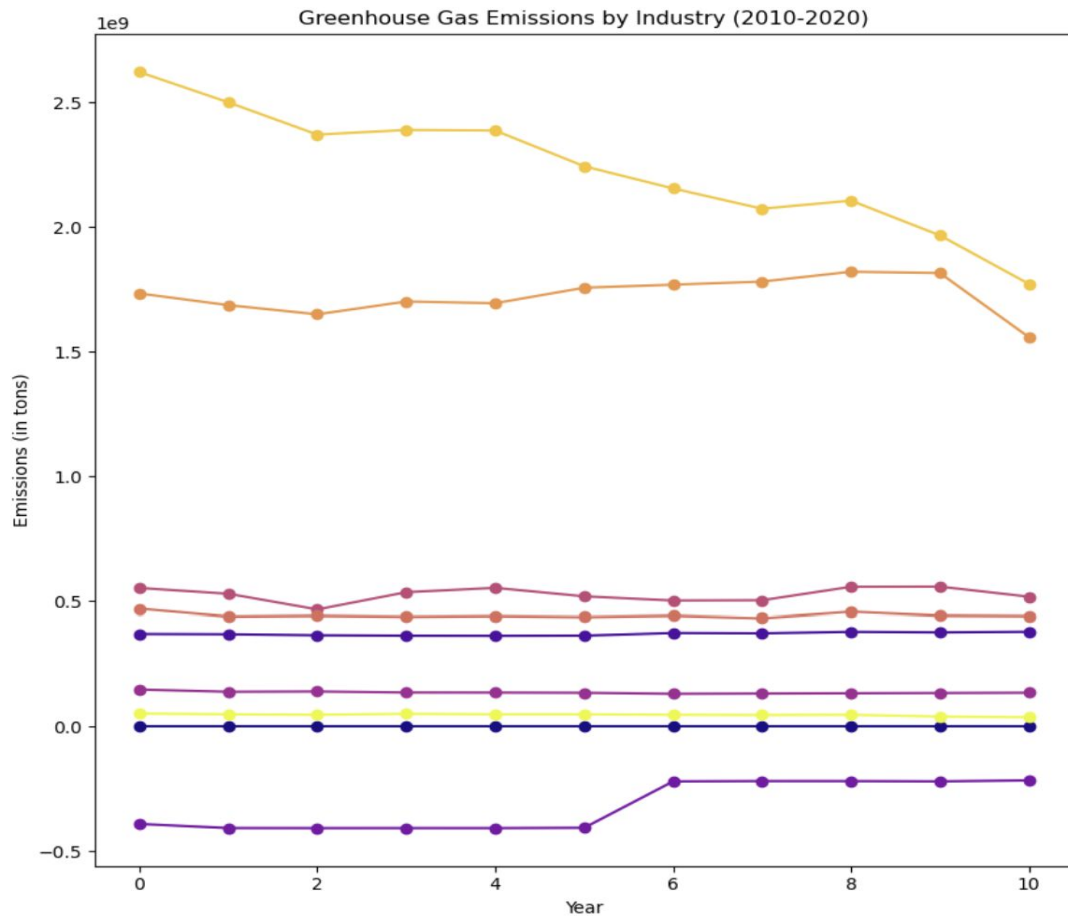
- Data visualization reveals trends and correlations.
 - Questions addressed:
 - Highest GDP contributor (2010-2020)?
 - Largest emission category?
 - Industry trends over time?
 - Volatility and growth by industry.
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Key Visualizations

- Positive correlation:
 - **Transportation, Electricity, Construction** drive both GDP and emissions.
 - Negative correlation:
 - **Forestry** indicates sustainable practices.
 - Sectors like **Petroleum** exhibit unique dynamics.
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Contribution to GDP by Industry (2010-2020)





Interpretation

- Sectors like Transportation and Electricity are pivotal for economic growth but heavily contribute to emissions.
 - Forestry's negative correlation suggests sustainability efforts.
 - Results highlight the varied environmental impacts of industrial activities.
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Conclusion

- Key industrial sectors significantly influence GDP and emissions, though impacts vary.
- Limitations:
 - Focus on two countries; excludes cross-border effects.
 - Limited policy and technological factors.
- Future research should expand scope and incorporate policy/tech assessments.

Thank You

