TRACING THE CLIMATE IMPACT: EXAMINING CO2 EMISSION EFFECTS ON TEMPERATURE PATTERNS IN BRAZIL

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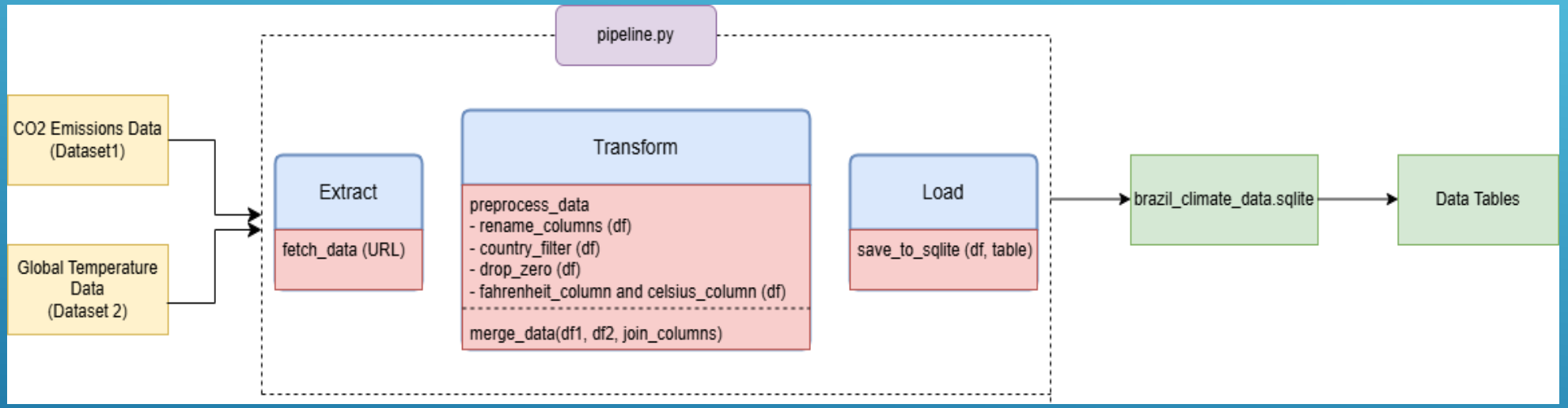
INTRODUCTION

- Investigates how CO_2 emissions influence the temperatures of Brazil
- Uses datasets on CO_2 emissions and global temperatures (filtered for Brazil)
- Main Question: “How do CO_2 emissions correlate with temperature trends in Brazil?”

DATA USED

- Dataset 1: CO2 emission data from Our World in Data (Github).
- Dataset 2: Temperature data from Figshare.
- Data processed through ETL pipeline for analysis:



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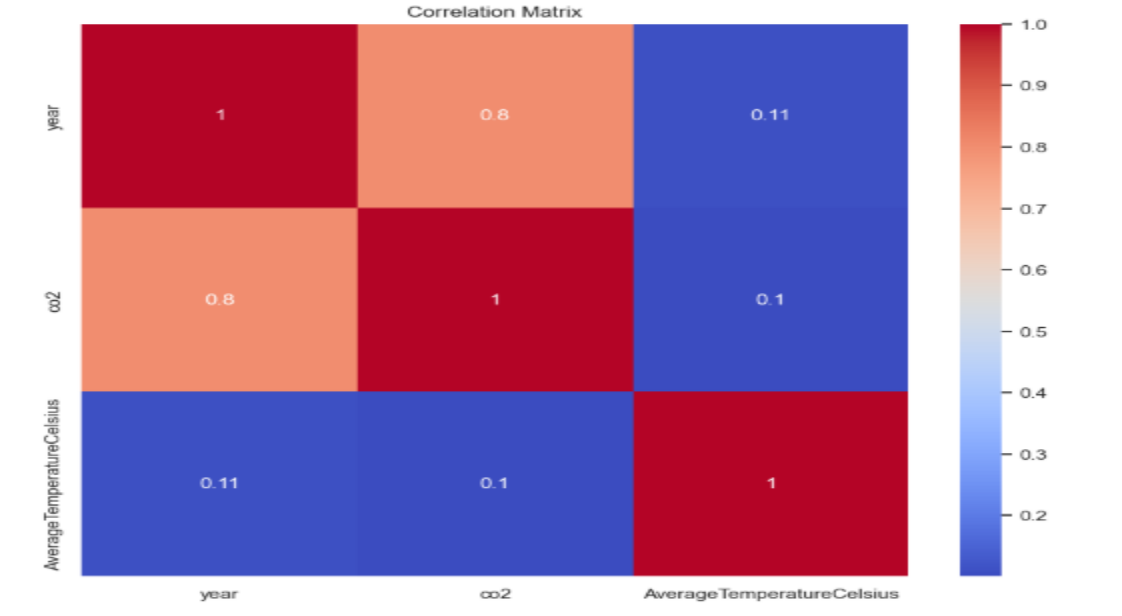
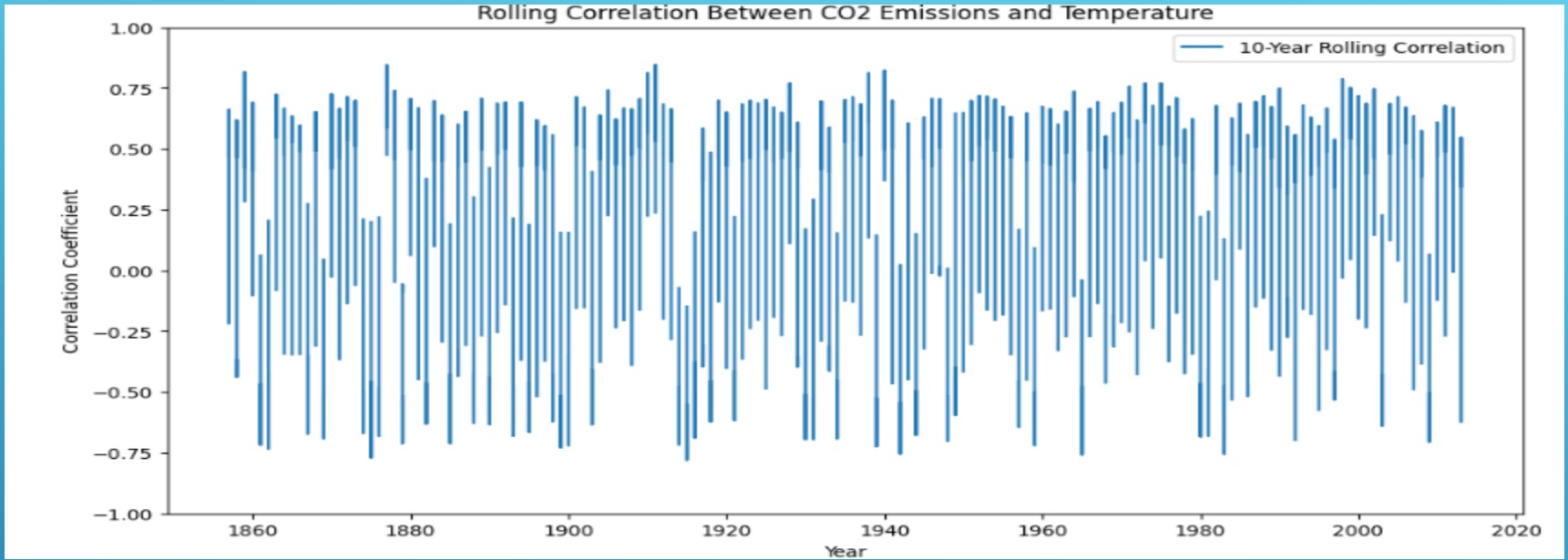
ANALYSIS
CORRELATION ANALYSIS



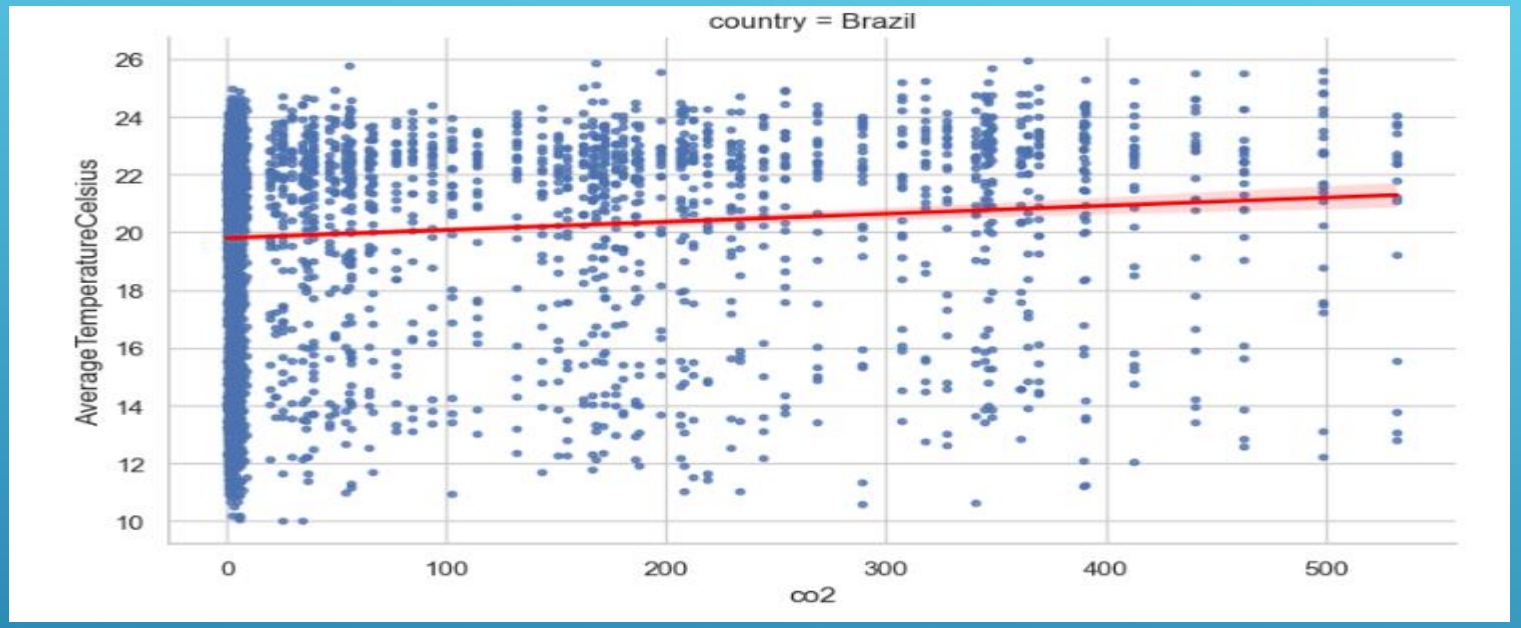
- Shows correlation coefficients between year, co2 and average temperature in Brazil.
- Strong positive correlation (0.8) between year and CO2 emissions.
- Weak positive correlation (0.11) between year and average temperature.
- Weak positive correlation (0.1) between CO2 emissions and average temperature.
- Shows CO2 emissions overtime, but link to temperature changes is weaker.

ROLLING CORRELATION OVER TIME



- Rolling (10 year) yearly correlation between CO2 emissions and average temperature after 1800s to recent times.
- Periods of positive correlation, notably in the early 1900s and post-1980s.
- Post-2000, trends show a stronger link between CO2 emissions and temperature.
- Highlights the changes between the temperature and CO2 over time.

CORRELATION ANALYSIS: FACET GRID PLOT



- Visualizes CO2 emissions vs. average temperature trends for Brazil.
- Positive correlation between CO2 and average temperature.
- Shows variability in relationships between CO2 and average temperature

CONCLUSION

- We find that, CO2 emissions correlate with Brazil's temperature trends, but not very strongly.
- As CO2 emissions rise, temperature also tend to increase.
- Overall, higher CO2 emissions are associated with rising temperatures in Brazil.
- Recommendation: Further studies should include factors like deforestation and climate variations, along with detailed long-term data, for deeper insights into temperature trends.

THANK YOU
DANKESCHÖN