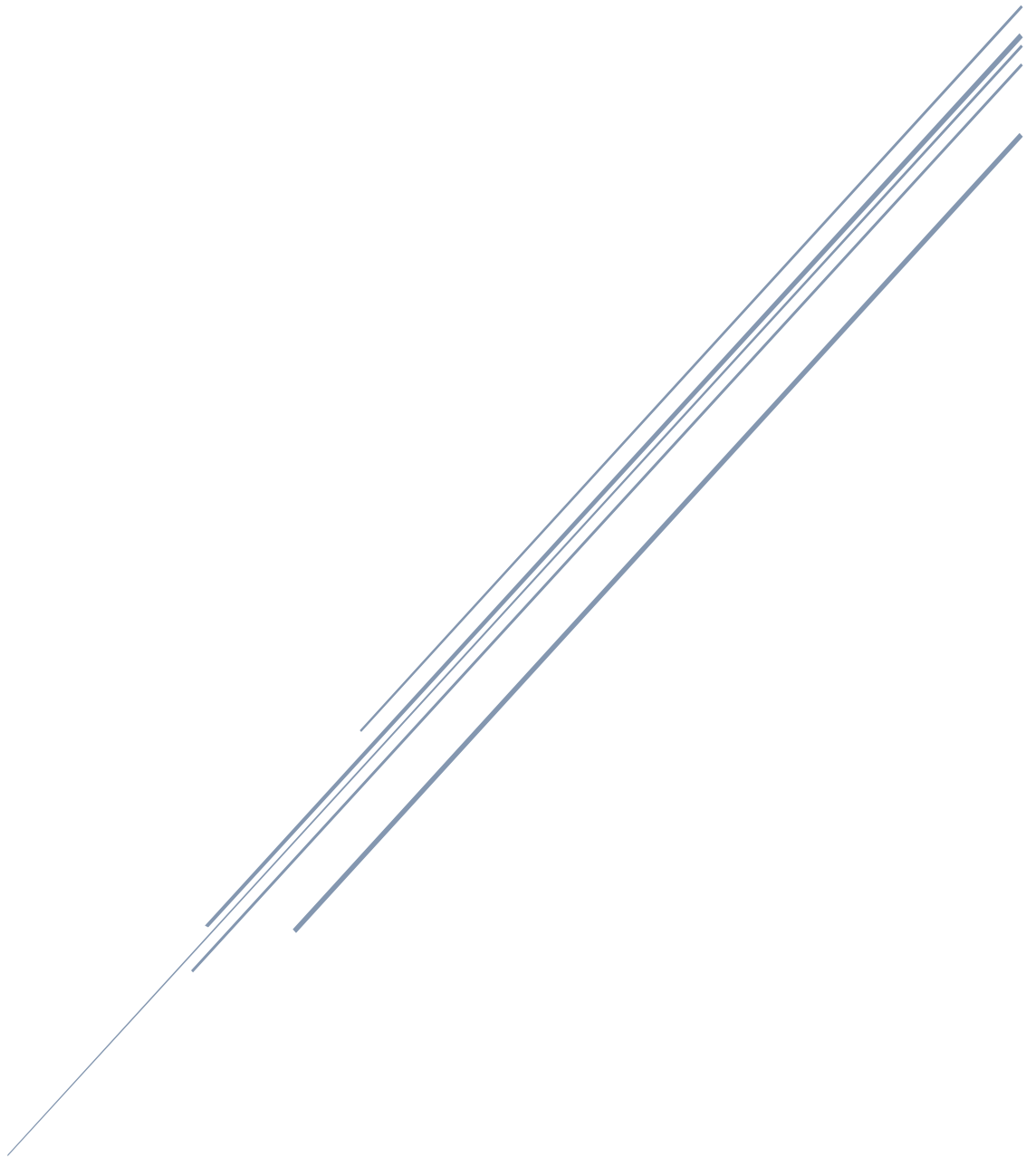# Navigating Tomorrow: The Interconnected Realms of AI Evolution, Politics, and Societal Liberty

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Abstract:

This research paper intends to explore the dynamic between global freedom political regimes, and the profound implications of artificial intelligence (AI) development on future societies. The central inquiry revolves around whether the deployment of AI by democratic governments is more inclined towards enhancing the well-being of their citizens. Can we determine the intent by looking at the political regime of a country? Through an examination of the pace of AI advancements across various political landscapes, this study aims to discern the underlying intentions by scrutinizing the evolving trends in freedom and economic indicators over time. By closely analysing these factors, we seek to shed light on the potential impact AI might have on society in different political regimes.

Introduction:

Over the course of history, humanity has confronted recurring risks such as wars and economic crises. Even pandemics, though less frequent, have left their mark. In recent years, new global risk factors have emerged, with climate crises impacting both underdeveloped and developed nations. However, the most recent and intriguing development is the rapid integration of Artificial Intelligence (AI) into our daily lives. While not identified as the most prominent risk in reports like ('Global Risks Report 2023' 2024), AI raises critical questions about safety and societal benefits.

Despite the numerous advantages of AI, there are associated risks, particularly when not handled properly. Which is the risk we are the most focused on in today's time. However, the dangers extend beyond the technology itself to encompass the intentions of those who wield AI, especially government leaders. According to the Global Risk Report, emerging technologies will play a significant role in how countries address crises in various domains. But how does development compare to the freedom of the society?

Different political regimes offer different restraints for their citizens. While freedom of expression ranks the lowest (Vásquez and Porčnik 2013) we must ask ourselves will further integration of AI bring advances in freedom of expression or will it be used to further restrict and control the population?

These are the big questions this analysis will attempt to answer.

Analysis Questions:

To explore these questions, the following key areas are investigated:

1. **What political regime is most prominent in AI development?**

o   Analysing the distribution of AI development across different political regimes to identify leading governance structures in technological advancement.
2. **How has the freedom status changed in observed countries over the past 10 years?**
    o   Tracking historical changes in freedom indices to understand how political regimes impact societal liberties over time.
3. **What future tendencies are emerging?**
    o   Identifying current trends in freedom and AI development to predict potential future scenarios.
4. **Are there countries that are on the trajectory to lose freedom or are already not free that rank high in AI development?**
    o   Evaluating the correlation between AI development and freedom status to identify countries at risk of increasing authoritarianism.
5. **How has the economic status changed within the past ten years for these countries?**
    o   Assessing changes in economic indicators to understand how economic conditions relate to AI development and political regimes.
6. **Is there a correlation between freedom change and economic change?**
    o   Exploring the relationship between changes in freedom status and economic performance to identify potential correlations.
7. **What political regime is showing the most economic progress?**
    o   Analyzing economic growth across different political regimes to determine which governance structures are most conducive to economic advancement.
8. **Is there a correlation between per capita GNI and AI development?**
    o   Investigating how economic indicators, specifically per capita Gross National Income (GNI), relate to AI development rankings.

Analysis:

Methodology

The analysis utilizes three primary datasets:

1. **Global AI Index** - Measures AI development across countries.

2. **Freedom Ranking per Country (2013-2022)** - Tracks freedom indices over a decade.

3. **Global Economy Indicators** - Provides economic data for assessing changes in economic status.

Data preparation and cleaning involved the use of Python libraries such as Pandas, Numpy, Scikit-learn, and SciPy, along with visualization tools like Matplotlib, Plotly, and Seaborn.

1st Dataset: AI Development (ai_df)

Analysis:

- **Data Cleaning**: The dataset was cleaned to retain relevant columns, including Country, Total Score, and Political Regime.

- **Findings**: Democratic countries, particularly those with high scores in AI development, show greater investment in technological advancements. The analysis revealed that democratic regimes, due to their supportive policies and higher innovation incentives, lead in AI development. Conversely, authoritarian regimes show lower AI development scores due to restrictive policies and limited technological freedoms.

1st dataset: ai_df

GLOBAL AI INDEX
Author **Kateryna Meleshenko,**
Research and Development Engineer at Intersog
Odesa, Odessa Oblast, Ukraine
The data was collected from various open sources using web scrapping as a method. Data was scrapped from open sources available to public which minimizes possibility for data collected to be compromised.
License: Open Data Commons (ODC)
('⚜ Global AI Index Insights 💥' 2024)

2nd Dataset: Freedom Status (freedom_df)

Analysis:

- **Data Cleaning**: Focused on essential columns ('Country', 'Edition', 'Status', 'Total') and dealt with missing values and duplicates.
- **Findings**: Over the past decade, freedom statuses have varied significantly. Countries with high AI development generally maintain stable freedom statuses, while more restrictive regimes show fluctuations in their freedom indices. This suggests that AI development can coexist with varying levels of freedom, though democratic nations tend to have more consistent freedom levels.

2nd dataset: freedom_df

FREEDOM RANKING PER COUNTRY (2013-2022)
Author: **The Data Wrangler**
Irvine, California, United States
The data was collected using compiled nation-state data on various statistics regarding liberties from the Freedom House.
License: NONCOMMERCIAL
('The Data Wrangler | Grandmaster' 2024)

3rd Dataset: Economic Indicators (economy_df)

Analysis:

- **Data Cleaning**: Isolated columns relevant to the analysis and focused on the last ten years' data.

- **Findings**: There is a notable correlation between economic growth and AI development. Democratic countries with higher per capita GNI exhibit more significant AI advancements. The analysis also revealed that economic progress is more pronounced in democratic regimes, which often provide a more conducive environment for innovation and technological growth.

3rd dataset: economy_df

GLOBAL ECONOMY INDICATOR Author: Prasad Patil Mumbai, Maharashtra, India United Nations website is cited as a data source. Exact citations and links are not provided so the verification of the data is not possible. Caution is advised when working with this type of dataset as there is to many unknows. License: CC0 Public Domain ('Prasad Patil | Expert' 2024)

Correlation Analysis

1. **Freedom and AI Development**:

   o **Findings**: High AI development scores do not necessarily correlate with increased freedom. While democratic regimes generally lead in AI, some countries with high AI scores may still exhibit restricted freedoms.

2. **Economic Change and Freedom Change**:

   o **Findings**: A positive correlation exists between economic growth and increased freedom. Countries with rising economic indicators tend to show improvements in freedom statuses, suggesting that economic prosperity can support greater liberties.

3. **Economic Progress and Political Regime**:

   o **Findings**: Democratic regimes show the most significant economic progress. The supportive environment for businesses and innovation in democracies contributes to higher economic growth compared to authoritarian regimes.

4. **Per Capita GNI and AI Development**:

   o **Findings**: Higher per capita GNI correlates with higher AI development scores. Wealthier countries with more significant economic resources are better positioned to invest in and advance AI technologies.

Outliers

Several factors can affect the analysis, including:

- **Data Compilation Years**: Different years of data collection may introduce inconsistencies or delays in reflecting real-time changes.

- **Human Factors**: Leadership and individual intentions can significantly influence the outcomes of AI development and freedom indices.

- **Dataset Limitations**: Variations in freedom definitions and data availability may affect the accuracy of the analysis.

Conclusion

The study highlights that while democratic regimes generally excel in AI development and economic progress, the correlation between AI development and freedom is not straightforward. AI's integration into society can have varying effects on freedom depending on the political regime. The analysis underscores the need for nuanced policies that consider both technological advancements and their implications for societal liberties.

Extended Analysis and Future Research

Future research could benefit from incorporating additional datasets such as:

- **Global Happiness Index**: To explore the relationship between AI development, freedom, and overall societal well-being.

- **Economic Freedom Index**: To understand how economic freedoms impact AI development and societal progress.

- **Freedom of the Press**: To investigate how media freedom correlates with AI development and political regimes.

Further longitudinal studies could provide deeper insights into the long-term effects of AI on freedom and economic growth, enhancing our understanding of these complex interactions.

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