**AI for Economics: Innovative Approaches with Machine Learning to Predict Upcoming Recession**

Abstract:

The integration of artificial intelligence (AI) and machine learning (ML) into economics has transformed the ability to predict economic recessions, it offers more accurate and precise forecasts. This project supports the use of innovative ML approaches for forecasting upcoming recessions using diverse data sources such as macroeconomic indicators, market sentiment, financial metrics, and global economic trends. By applying advanced ML algorithms, including neural networks, support vector machines, random forests, and ensemble methods, the study shows us how these techniques can discover complicated patterns and early warning signs that traditional approaches may not be able to capture. Through a comparative analysis of various ML models, this project identifies the most effective strategies for predicting recessions with a high degree of accuracy. The findings will reveal that ML models can significantly outperform traditional econometric models in forecasting economic recessions, providing valuable insights for governments, policymakers, financial institutions, and investors. These insights enable the formulation of proactive measures to reduce the destructing effects of recessions, enhancing economic robustness and stability. Moreover, the project discusses the ethical considerations and potential limitations of using AI in economic forecasting, advocating for a balanced approach that combines human expertise with machine intelligence. Ultimately, this project underscores the transformative potential of AI and ML in economic forecasting, highlighting their role in fostering more informed and adaptive economic planning. The project will pave the way for future studies to further refine these models and expand their application in various economic contexts.

Keywords:

Economic recession, Machine learning, Neural networks, Random Forest, Support vector machines, Ensemble methods