

Preface:

Consumer Price Index (CPI) and Wholesale Price Index (WPI) inflation are important economic indicators that track Price fluctuations in consumer-purchased items and services. The CPI is mostly used by economists, policymakers, and businesses to track inflation, make monetary policy decisions, and forecast future economic trends.

Machine learning is flourishing in the finance domain one such case is to predict inflation. Machine learning models are used to can analyze historical data and identify complex patterns that are not easily observable through traditional statistical methods and give valuable insights. By leveraging ML, we can develop more accurate and reliable CPI inflation prediction models that can help policymakers and businesses make informed decisions.

This report presents a study of using machine learning to predict CPI inflation. We use historical CPI data from the (MOPIS) Ministry of Statistics and Program Implementation and Reserve Bank of India and apply Deep learning techniques, (LSTM) long short-term memory, and neural networks to build prediction models. We evaluate the performance of these models using various metrics, such as mean absolute error and root mean squared error.

Our findings show that machine learning can improve the accuracy of CPI inflation prediction compared to traditional statistical methods. Our best-performing model achieved a mean square error of 0.37%, which is significantly lower than the 0.45% error achieved by the baseline statistical model. Our findings show that machine learning has the capacity to anticipate CPI inflation and give insights for future research and applications.