Smarter Solar Power Forecasting for a Sustainable Future

With the progression of the world toward renewable power sources, the prediction of solar power is more important than ever. Any changes in solar power create problems for the stability of power grids and the consumption of power. For this purpose, we proposed a method of using deep learning techniques that incorporate the use of Wavelet Transform with Long Short-Term Memory (WT-LSTM) for improving the prediction of photovoltaic (PV) power to a great extent. This is important because of the impact of the work beyond the technical aspects of the work.

The work is crucial because it helps in the increased utilization of solar power for the consumption of power, thereby reducing power waste. This is helpful for the sustainability of the world, especially for the attainment of Sustainable Development Goal (SDG) 7 (Affordable and Clean Energy). With the increased utilization of renewable power sources, there is a decrease in the use of fossil fuels, thereby reducing the amount of carbon emissions into the environment, which is helpful for the attainment of SDG 13 (Climate Action).

Furthermore, the application of smart forecasting models enables innovation in the field of energy systems and smart infrastructure, thereby contributing to the achievement of the 9th SDG (Industry, Innovation, and Infrastructure). All these developments are required for the development of efficient and sustainable energy systems. This study demonstrates how artificial intelligence can bring a revolutionary change to the problems of the real world. It can bring a significant change to the development of efficient solar power technology, thereby improving technology as well as contributing to the development of a clean, green, and sustainable world.