

Can machine learning fill a gap in solar energy generation data?

The results, when observed together, suggest that both models could perform imputations that visually align with the observed data patterns. This is a positive indication of the applicability of advanced machine learning techniques to fill in the gaps in the time series data of solar energy generation.

Can XAI be used for solar power generation forecasts?

The goal is to get a better understanding of how to apply XAI techniques to solar power generation forecasts and how to interpret “black box” machine learning models for usage in solar power station applications. In this paper, the Long-Short Memory (LSTM) is assumed to be the primary black-box model.

Can concentrating solar power be developed in China?

Ji J, Tang H, Jin P. Economic potential to develop concentrating solar power in China: a provincial assessment. *Renew Sustain Energy Rev.* 2019;114:109279. Ling-zhi R, Xin-gang Z, Yu-zhuo Z, Yan-bin L. The economic performance of concentrated solar power industry in China. *J Clean Prod.* 2018;205:799-813.

Who is Larry Hsien Ping Lang?

Larry Hsien Ping Lang ( Chinese: 郎咸平; pinyin: Láng Xiānpíng; Wade-Giles: Lang Hsien-p'ing) (a.k.a. Larry Lang, Larry H.P. Lang, Lang Xianping, and Lang Hsien-ping) (born 1956) is a Hong Kong-based economist, commentator, author and TV host in China. Lang has become a famous and controversial figure in China in recent years:

How can machine learning improve the analysis of solar energy data?

In this context, machine learning techniques such as Random Forest and Gradient Boosting emerge as powerful tools to address limitations in the analysis of solar energy data. Random Forest, an ensemble learning method, is known for its high accuracy and ability to handle large datasets with multiple input variables [4].

Can imputation of missing solar energy generation data improve quality and reliability?

By applying this model to the imputation of missing solar energy generation data, we can significantly improve the quality and reliability of the analyses. For this purpose, the work uses variables such as temperature, radiation, humidity, and wind speed for data estimation.

XAI is extensively used in industry for vibration signal analysis [122], multivariate time series forecasting [99], industry machinery [123], solar power generation forecasting ...

Solar power generation is a promising and sustainable source of energy that has gained significant attention in recent years due to its potential to reduce greenhouse gas emissions and mitigate ...

This paper proposes a model called X-LSTM-EO, which integrates explainable artificial intelligence (XAI), long short-term memory (LSTM), and equilibrium optimizer (EO) to reliably forecast solar power ...

Research on predicting renewable energy generation can be categorized based on time scales into ultra-short term forecasting (Li et al., 2021), short term forecasting (Li et al., 2022), and ...

OverviewPersonal backgroundEducationCareer and professional ethicsControversyImpact to the public domain in mainland ChinaSocial repercussionsNotable worksLarry Hsien Ping Lang (Chinese: 郎咸平; pinyin: Lǎng Xiǎnpíng; Wade-Giles: Lang Hsien-p'ing) (a.k.a. Larry Lang, Larry H.P. Lang, Lang Xianping, and Lang Hsien-ping) (born 1956) is a Hong Kong-based economist, commentator, author and TV host in China. Lang has become a famous and controversial figure in China in recent years: Since 2002, Lang has risen to his fame by "scolding". From D'Long to Haier, from TCL to Green...

However, to achieve supply sustainability for meeting the ever-rising power demands, there is a need to optimize solar power generation's production cost. It is the most important and ...

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