Patent:

Granular Predictor for Probabilistic Intervals Construction

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Problem

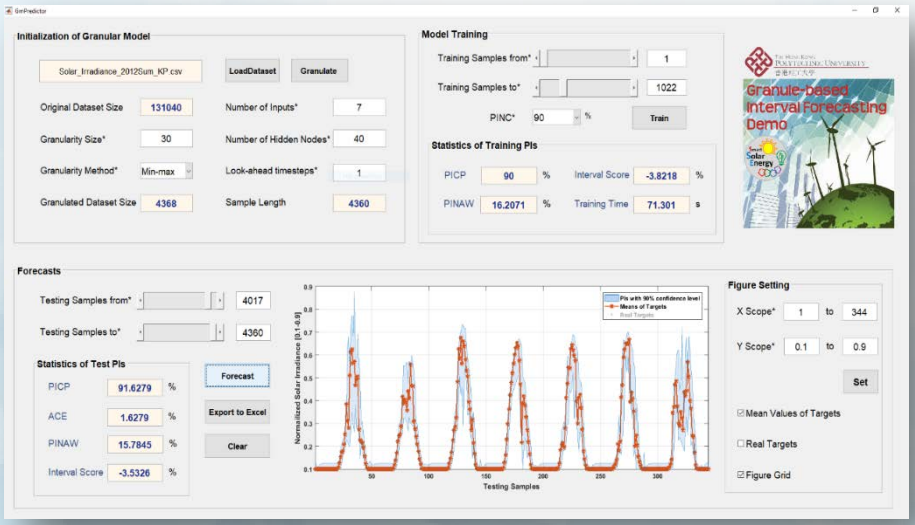
- Forecasting the generation and consumption of electricity is essential to achieve energy efficiency and economy.
- Compare to demand forecast, the prediction of renewable generations is more challengeable due to their whether-dependent nature.
- Probabilistic interval forecast can provide additional uncertainty information associated with the traditional point forecast.
- Uncertainty information can assist decision makers to devise suitable control and dispatch strategy.

Features

- The proposed granular predictor can well inform the stochastic uncertainty in raw data and knowledge uncertainty in models in a probabilistic framework with high reliability and low computational burden.

Advantages

- No need of pre-assuming the predictive distribution.
- Both stochastic uncertainty and knowledge uncertainty can be well captured by this predictor.
- Fast learning speed thus being applicable to online forecast.



Related Patent

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Using the Matlab software, the team developed the **Forecasting System for Renewable Energy (FSRE).** Currently, it is applied to estimate the probabilistic intervals for the solar PV power in their microgrid.

More information of Prof. Xu's related work:
http://hkzhaoxu.simplesite.com/

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