

Solar Power Prediction Based on Weather Forecast

Friday 16 September 2022 11:20 (20 minutes)

Prediction of an evolving system behavior based on a sparse historic data set is hardly achievable with current artificial intelligence concepts, even if using massive computing power.

This paper presents a novel prediction technique for such difficult cases.

The technique is based on local regression and dimensional splitting of the parameter space.

As an application, the power generated by a generic solar cell is predicted, based on the weather forecast obtained from public sources.

The algorithm maintains a good balance between generating reasonably good predictions and keeping the computation needs very low.

Several common prediction strategies are compared, proving the superiority of an adaptive approach.

Measurements on an experimental device are used to validate the prediction technique.

Author: MANOLACHE, Florin Bogdan (Carnegie Mellon University)

Co-author: Dr RUSU, Octavian (Alexandru Ioan Cuza University)

Presenters: MANOLACHE, Florin Bogdan (Carnegie Mellon University); Dr RUSU, Octavian (Alexandru Ioan Cuza University)

Session Classification: Session 2A - Sensor Networking

Track Classification: Sensor Networking