Call for Papers:

Special Session on "Machine learning for renewable energy applications"

IDEAL'18

19th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'18)

Scope

In the last decade, global energy demand has increased to non-previously seen levels, mainly due to the increase in population, fierce urbanization in developed countries and aggressive industrial development all around the world. Conventional fossil-based energy sources have limited reservoirs and a deep environmental impact (contributing to global warming), and therefore they cannot satisfy this global demand for energy in a sustainable way. These issues related to fossil-based sources have led to a very important development of Renewable Energy (RE) sources in the last years, mainly in renewable technologies such as wind, solar, hydro or marine energies, among others. In this regard, Machine Learning (ML) techniques have been demonstrated to be excellent tools to cope with difficult problems arisen from new RE sources. There are many RE applications which can be tackled by ML techniques, such as prediction problems (e.g. solar radiation or significant wave height estimation), optimization algorithms (wind farm or RE devices' design), new control techniques or fault diagnosis in RE systems, all of them with the common objective of improving significantly RE systems.

This special session aims to cover a wide range of works and recent advances on the application of ML techniques to RE problems. We hope that this session can provide a common forum for researchers and practitioners to exchange their ideas and report their latest finding in the area.

The special session is being organized within the "19th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'18)" (https://aida.ii.uam.es/ideal2018). IDEAL'18 will be held in Madrid, Spain, in November of 2018, and is an annual international conference dedicated to emerging and challenging topics in intelligent data analysis, data mining and their associated learning systems and paradigms.

Topics

In particular we encourage submissions addressing the following issues:

- Wind speed prediction problems.
- Solar radiation prediction problems.
- Wave height estimation problems.
- RE Power prediction.
- Fault diagnosis in RE-related systems.
- Power quality disturbance detection and analysis.
- Appliance Load Monitoring applications.
- Any application of ML techniques to RE problems.

Proceedings

Accepted papers presented at the conference will be included in the Proceedings of IDEAL 2018, to be published by Springer in its LNCS series, which is indexed in EI. In addition, selected papers will be invited for special issues in several leading international journals in the field, including the International Journal of Neural Systems (IJNS), Journal of Data Science and Analytics, etc.

Organizers

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