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Data mining applied to renewable energies industry

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One of the key activities of data mining is to discover and make clear hidden relations and working rules in complex systems. Renewable energies industry is a complex scope in which first principles approaches have been used to make predictions about the behavior of the different elements which they are composed of; but that approach is not enough to deal with complex problems, where more intelligence-based approaches are needed. For example, in the case of photovoltaic energy, data mining can be used for autonomous learning of the behavior of elements at different scale of complexity, e.g., photovoltaic cells, photovoltaic panels or modules, photovoltaic arrays or large photovoltaic facilities, in such a way that the obtained models could be used for different purposes. Two of the most usual purposes found in the literature are the prediction of electric energy generation depending on the climatologic conditions, and the possibility of detecting whether the devices in a general sense are at a point of operation that is going far away from the supposed for given conditions, i.e., the devices are starting to work not properly, being very convenient to take actions from both technical and economical points of view.

Biography

Jose Manuel Lopez-Guede received his PhD Degree in Computer Sciences from Basque Country University. He got three investigation grants and worked in a company for four years. Since 2004, he worked as full time Lecturer and since 2012 as Associate Professor. He has been involved in 24 competitive projects and published more than 100 papers, 25 on Educational Innovation and the remaining in other research areas. He has 25 ISI JCR publications, more than 15 other journals and more than 40 conferences. He has belonged to more than 10 organizing committees of international conferences and to more than 15 scientific committees.

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