

Expert Lecture
On
Computational Intelligence models for
Solar Energy Applications

By
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TITLE: Computational Intelligence models for Solar Energy Applications

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ABSTRACT

Several factors affect the efficiency of a solar plant: among them, the electrical working conditions of the panels, the local weather, and the tidiness of the panel.

Besides, the economic cost of operations to maintain and manage the plant have to be considered in its adoption. This talk investigated the use of computational intelligence paradigms to model the behavior of a solar panel in terms of energy production forecast, Maximum Power Point (MPP) prediction and the degradation of production due to the presence of dust on the panel have been modeled,

Several prediction computational intelligence techniques have been challenged in these tasks to exploit measurements directly collectible from the panel and from public weather station.

BIOGRAPHY

Professor Vincenzo Piuri has received his Ph.D. in computer engineering at Politecnico di Milano, Italy (1989). He has been Associate Professor at Politecnico di Milano, Italy and Visiting Professor at the University of Texas at Austin and at George Mason University, USA. He is Full Professor in computer engineering at the Università degli Studi di Milano, Italy (since 2000).

His main research interests are: intelligent systems, signal and image processing, machine learning, pattern analysis and recognition, theory and industrial applications of neural networks, intelligent measurement systems, industrial applications, biometrics, fault tolerance, digital processing architectures, embedded systems, and arithmetic architectures. Original results have been published in more than 350 papers in international journals, proceedings of international conferences, books, and book chapters.

He is a Fellow of the IEEE, Distinguished Scientist of ACM, and Senior Member of INNS. He has been IEEE Vice President for Technical Activities (2015), IEEE Director, President of the IEEE Computational Intelligence Society, Vice President for Education of the IEEE Biometrics Council, Vice President for Publications of the IEEE Instrumentation and Measurement Society and the IEEE Systems Council, and Vice President for Membership of the IEEE Computational Intelligence Society. He is Editor-in-Chief of the IEEE Systems Journal (2013-17), and has been Associate Editor of the IEEE Transactions on Neural Networks and the IEEE Transactions on Instrumentation and Measurement.

He received the IEEE Instrumentation and Measurement Society Technical Award (2002) for the contributions to the advancement of theory and practice of computational intelligence in measurement systems and industrial applications. He is Honorary Professor at the Obuda University, Budapest, Hungary (since 2014), and Guest Professor at Guangdong University of Petrochemical Technology, China (since 2014) and at the Muroran Institute of Technology, Japan (since 2016).

More information are available at <http://www.di.unimi.it/piuri>