

Title

Artificial Intelligence and its Application in Renewable Energy Systems

Abstract

Recent years, renewable energy is experiencing a rapid growth, large number of renewable energy sources have been installed and connected to power systems. In addition to the large centralized wind farms connected to transmission grids, many distributed wind turbines and PV panels are operated as distributed generators in distribution systems. This presentation discusses several applications of artificial intelligence and optimization in renewable energy systems, including the European and Chinese experiences. Some of our research at Institute of Smart Power and Energy Systems (ISPES), University of Electronics Science and Technology of China (UESTC) will also be introduced.

Bio



Weihao Hu (IET Fellow, IEEE Senior Member) received the B.Eng. and M.Sc. degrees from Xi'an Jiaotong University, Xi'an, China, in 2004 and 2007, respectively, and the Ph.D. degree from Aalborg University, Denmark, in 2012, all in electrical engineering.

He is currently a Full Professor and the Director of Institute of Smart Power and Energy Systems, University of Electronics Science and Technology of China, Chengdu, China. He was an Associate Professor with the Department of Energy Technology, Aalborg University, Denmark, and the Vice Program Leader of Wind Power System Research Program at the same department. He has led/participated in more than 15 national and international research projects and he has more than 170 publications in his technical field. His research interests include artificial intelligence in modern power systems and renewable power generation.

Dr. Hu is an Associate Editor for the IET Renewable Power Generation, a Guest Editor-in-Chief for the Journal of Modern Power Systems and Clean Energy Special Issue on Applications of Artificial Intelligence in Modern Power Systems, a Guest Editor-in-Chief for the Transactions of China Electrical Technology Special Issue on Planning and operation of multiple renewable energy complementary power generation systems, and a Guest Editor for IEEE TRANSACTIONS ON POWER SYSTEMS Special Section on Enabling very high penetration renewable energy integration into future power systems. He was the Technical Program Chair for IEEE INNOVATIVE SMART GRID TECHNOLOGIES Asia 2019 and is the Conference Chair for the Asia Energy and Electrical Engineering Symposium. He is currently the Chair for IEEE Chengdu Section PELS Chapter. He is a Fellow of the Institution of Engineering and Technology, London, U.K.