

Editorial

Artificial Intelligence and Data Mining 2014

Fuding Xie,¹ Suohai Fan,² Jianzhou Wang,³ Helen Lu,⁴ and Caihong Li⁵

¹ School of Urban and Environmental Sciences, Liaoning Normal University, Dalian 116029, China

² School of Information Science and Technology, Jinan University, Guangzhou 510632, China

³ School of Mathematics and Statistics, Lanzhou University, Lanzhou 730000, China

⁴ Department of Software Engineering, University of Technology, Sydney, NSW 2007, Australia

⁵ School of Information Science and Engineering, Lanzhou University, Lanzhou 730000, China

Correspondence should be addressed to Fuding Xie; xiefd@lnnu.edu.cn

Received 21 August 2014; Accepted 21 August 2014; Published 14 October 2014

Copyright © 2014 Fuding Xie et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Artificial intelligence and data mining techniques have been widely used in many domains to solve classification, planning, diagnosis, computation, prediction, and optimization problems. The aim of this special issue is to reflect the latest development in this research field and provide advanced knowledge for researchers actively working on algorithms and applications of artificial intelligence. The accepted papers in this issue are concerned with the following topics: (i) forecasting models based on statistical methods and artificial intelligence; (ii) advanced artificial intelligence algorithm and novel data mining techniques; (iii) computational intelligence in medical science and biology; (iv) time series analysis in economics and finance; (v) machine learning on massive datasets.

Among them, there are nine papers regarding forecasting models based on artificial intelligence and data mining techniques. In “Short-term wind speed forecasting using decomposition-based neural networks combining abnormal detection method,” authored by X. Chen et al., two three-stage hybrid approaches are developed for short-term wind speed forecasting. In “Wind power assessment based on a WRF wind simulation with developed power curve modeling methods,” authored by Z. Guo and X. Xiao, the authors propose two improved power curve modeling methods. In “A hybrid approach by integrating brain storm optimization algorithm with grey neural network for stock index forecasting,” authored by Y. Sun, a novel hybrid model based on the brain storm optimization approach is constructed for stock index forecast. In “Hybrid wind speed forecasting model study

based on SSA and intelligent optimized algorithm,” authored by W. Zhang et al., the authors investigate singular spectrum analysis in three time series models to forecast wind speed. In “Intelligent optimized combined model based on GARCH and SVM for forecasting electricity price of New South Wales, Australia,” authored by Y. Yang et al., the researchers suggest an optimized combined forecasting model by ant colony optimization algorithm. In “A hybrid forecasting model based on bivariate division and a backpropagation artificial neural network optimized by chaos particle swarm optimization for day-ahead electricity price,” authored by Z. Wang et al., a bivariate division backpropagation artificial neural network method based on chaos particle swarm optimization is utilized for electricity price prediction. In “An optimized forecasting approach based on grey theory and cuckoo search algorithm: a case study for electricity consumption in New South Wales,” authored by P. Jiang et al., the authors build a hybrid grey model optimized by cuckoo search algorithm. In “Radial basis function neural network based on an improved exponential decreasing inertia weight-particle swarm optimization algorithm for AQI prediction,” authored by J. Lu et al., a novel radial basis function neural network model optimized by improved particle swarm optimization is developed. In “Deterministic echo state networks based stock price forecasting,” authored by J. Dan et al., echo state network with deterministically constructed reservoir is investigated.

Second, there are six papers on new algorithm and new model design. In “Online learning discriminative dictionary with label information for robust object tracking,” authored by