

Contents

Sustainable Development and Computing—An Introduction	1
Jörg Lässig	
Wind Power Prediction with Machine Learning	13
Nils André Treiber, Justin Heinermann and Oliver Kramer	
Statistical Learning for Short-Term Photovoltaic Power Predictions . . .	31
Björn Wolff, Elke Lorenz and Oliver Kramer	
Renewable Energy Prediction for Improved Utilization and Efficiency in Datacenters and Backbone Networks	47
Baris Aksanli, Jagannathan Venkatesh, Inder Monga and Tajana Simunic Rosing	
A Hybrid Machine Learning and Knowledge Based Approach to Limit Combinatorial Explosion in Biodegradation Prediction	75
Jörg Wicker, Kathrin Fenner and Stefan Kramer	
Feeding the World with Big Data: Uncovering Spectral Characteristics and Dynamics of Stressed Plants	99
Kristian Kersting, Christian Bauckhage, Mirwaes Wahabzada, Anne-Kathrin Mahlein, Ulrike Steiner, Erich-Christian Oerke, Christoph Römer and Lutz Plümer	
Global Monitoring of Inland Water Dynamics: State-of-the-Art, Challenges, and Opportunities	121
Anuj Karpatne, Ankush Khandelwal, Xi Chen, Varun Mithal, James Faghmous and Vipin Kumar	
Installing Electric Vehicle Charging Stations City-Scale: How Many and Where?	149
Marjan Momtazpour, Mohammad C. Bozchalui, Naren Ramakrishnan and Ratnesh Sharma	

Computationally Efficient Design Optimization of Compact Microwave and Antenna Structures 171
Slawomir Koziel, Piotr Kurgan and Adrian Bekasiewicz

Sustainable Industrial Processes by Embedded Real-Time Quality Prediction 201
Marco Stolpe, Hendrik Blom and Katharina Morik

Relational Learning for Sustainable Health 245
Sriram Natarajan, Peggy L. Peissig and David Page

ARM Cluster for Performant and Energy-Efficient Storage. 265
Diana Gudu and Marcus Hardt



<http://www.springer.com/978-3-319-31856-1>

Computational Sustainability

Lässig, J.; Kersting, K.; Morik, K. (Eds.)

2016, VI, 276 p. 98 illus., 75 illus. in color., Hardcover

ISBN: 978-3-319-31856-1