

SPECIAL SECTION PAPERS

DISTRIBUTED COMPUTING FOR REMOTELY SENSED BIG DATA PROCESSING

Edited by J. A. Benediktsson and Z. Wu

1282 Recent Developments in Parallel and Distributed Computing for Remotely Sensed Big Data Processing

By Z. Wu, J. Sun, Y. Zhang, Z. Wei, and J. Chanussot

| INVITED PAPER | A comprehensive review of state-of-the-art methods for processing remotely sensed big data is given along with a thorough investigation of existing distributed and parallel approaches that are based on popular high-performance computing (HPC) platforms. Future directions for tackling challenging issues in distributed and parallel processing of remotely sensed big data are given.

1306 Parallel and Distributed Computing for Anomaly Detection From Hyperspectral Remote Sensing Imagery

By Q. Du, B. Tang, W. Xie, and W. Li

| INVITED PAPER | Representative and recent advances in hyperspectral anomaly detection approaches are discussed along with their parallel and distributed implementations on graphic processing unit (GPU), cloud computing, and field-programmable gate array (FPGA) platforms.

1320 Distributed Deep Learning for Remote Sensing Data Interpretation

By J. M. Haut, M. E. Paoletti, S. Moreno-Álvarez, J. Plaza, J.-A. Rico-Gallego, and A. Plaza

| INVITED PAPER | A comprehensive review of the state-of-the-art in deep learning for remote sensing data interpretation is given. The pros and cons of the most widely used techniques in the literature are analyzed, as well as their parallel and distributed implementations. The article concludes with some remarks about future challenges in the application of deep learning techniques to distributed remote sensing data interpretation problems.

1350 Distributed Fusion of Heterogeneous Remote Sensing and Social Media Data: A Review and New Developments

By J. Li, Z. Liu, X. Lei, and L. Wang

| INVITED PAPER | Distributed computing strategies in remote sensing techniques and applications that use various data sources are comprehensively reviewed. A new distributed fusion framework that can accelerate the fusion of heterogeneous remote sensing and social media data is proposed by decomposing large data sets into small ones and processing them in parallel.

REGULAR PAPERS

1364 Review of Nanocomposite Dielectric Materials With High Thermal Conductivity

By M. Lokanathan, P. V. Acharya, A. Ouroua, S. M. Strank, R. E. Hebner, and V. Bahadur

| CONTRIBUTED PAPER | This article summarizes progress in the development of such materials with a focus on developments that show promise for improved practical dielectrics.

1398 Spintronics for Energy-Efficient Computing: An Overview and Outlook

By Z. Guo, J. Yin, Y. Bai, D. Zhu, K. Shi, G. Wang, K. Cao, and W. Zhao

| CONTRIBUTED PAPER | This article reviews existing technology and provides a roadmap of spintronic devices for future energy-efficient computing and its relevant integration architectures.

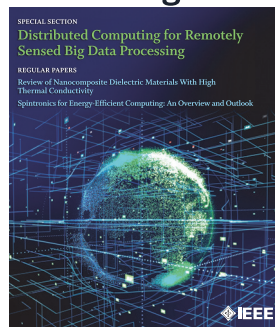
DEPARTMENTS

1278 SCANNING THE SECTION

Distributed Computing for Remotely Sensed Data Processing
By J. A. Benediktsson and Z. Wu

1418 FUTURE SPECIAL ISSUE/SPECIAL SECTIONS

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On the Cover:

The cover image aptly captures the theme of this month's special section on computing methods for remotely sensed big data processing.